

The background of the image is a photograph of a forest. The trees are tall and slender, with their trunks appearing as light-colored vertical lines against a darker, more textured background of green leaves and branches. The perspective is looking upwards, creating a sense of height and density. The lighting is soft, suggesting a dappled sunlight effect through the canopy.

# **Creative Forestry**







Gill Lewis 2.00

# Creative Forestry

**Landscape Section  
Planning Division  
New Zealand Forest Service  
Private Bag Wellington**





Creative Horizons

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# Creative Forestry

## A Guideline for Forest Managers

These notes are only a beginning. They will be revised as our appreciation of the landscape evolves with an increased understanding of multiple use. Their purpose is to help forest managers understand and assess landscape values and relate them to forestry. They result from observations and experiences shared with forest managers over the past three years. Their enthusiastic assistance in the collection and collation of information and photographs has been greatly appreciated.

**Clive Anstey  
Steve Thompson  
Karen Nichols**



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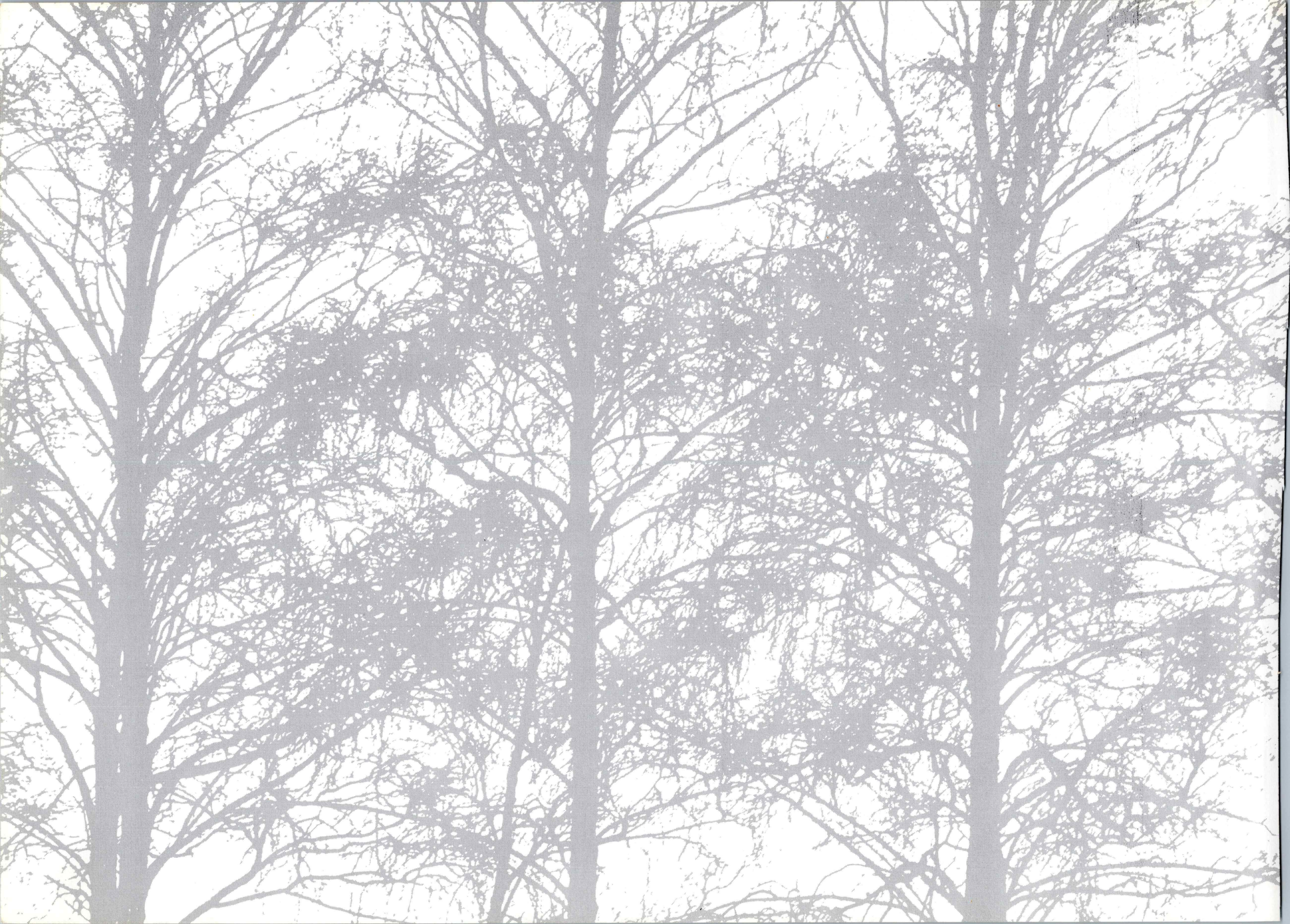
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**It is man's desire to see some tangible expression of his ideas. As a renewable resource forests can sustain this need. To do so they must be managed in a way which satisfies man's creative drive while respecting nature's creative purpose. This relationship is perceived as quality and experienced as harmony.**







# Landscape and Environment





## 1 Landscape and Environment

The physical environment provides physical products and as such is a resource. Products derive from specific areas and their use leads to demarcations. Ecology teaches that there are essential links within and between areas, links which must remain unbroken if the health of the whole system is to be sustained. The protection of soil and water values is fundamental to this cause and forests play a major part.

The physical environment does more than provide our physical needs; it is our constant companion. In both action and contemplation we are a part of its ecology and design. We experience this physical environment as our landscape. Our appreciation of landscape beauty is in some way an intuitive response to ecological harmony.

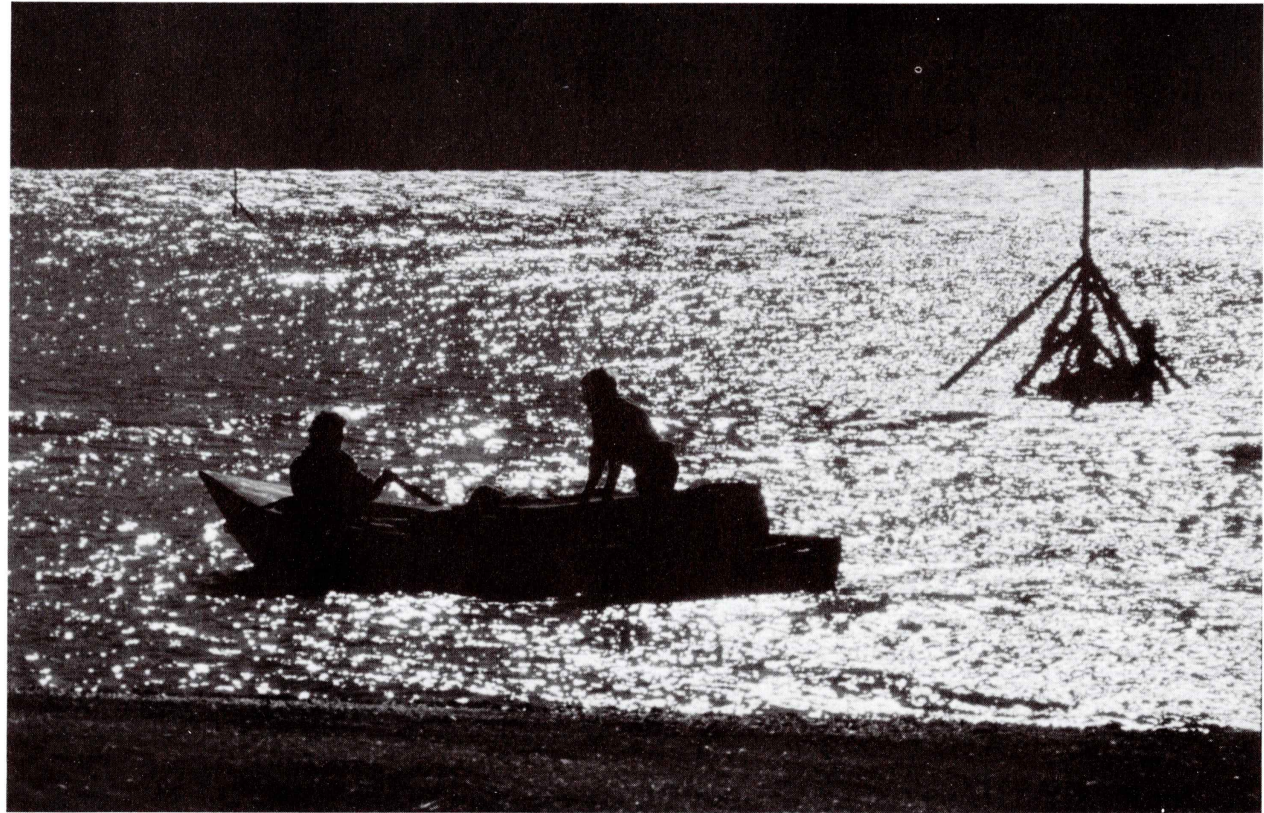
The challenge we face is to acknowledge the process of change, to understand the creative quality of ecological harmony and apply this awareness to creative action. We must discover the subtle needs we have in common with the landscape which embraces us.





## 1 Landscape and People

Most people are strongly influenced by what they see, so it is a logical generalisation to evaluate landscape in terms of 'visual quality'. Stephen Kaplan, an American who has studied human perception, suggests that what we see is influenced by elements in landscape that people universally respond to subconsciously. They are naturalness, diversity, unity and mystery. In the right balance they collectively constitute 'quality'.

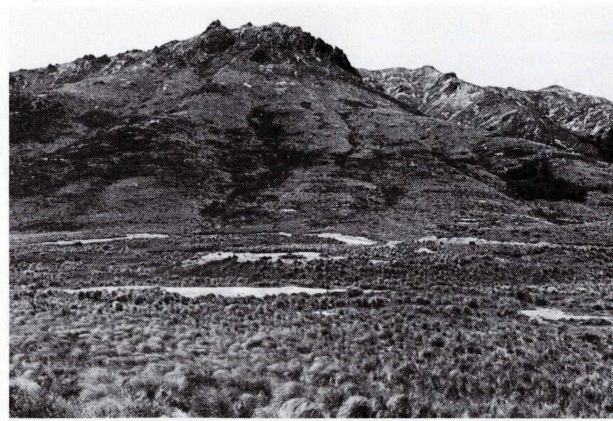




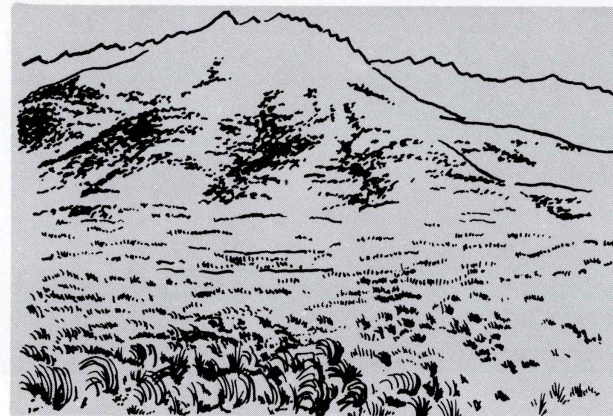
## 1 Landscape and People—diversity and unity

These factors are best taken together although one apparently contradicts the other.

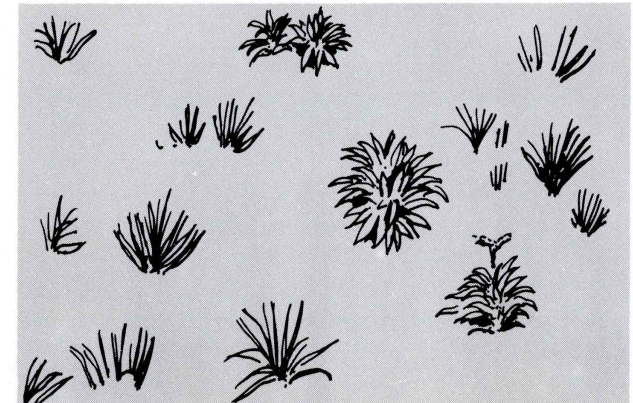
In our daily lives we require a balance of variety and routine. Diversity within unity is essential to all natural systems as an adaptive potential. Visually we respond to this. A forest with excessive unity can be monotonous. Too much variety can be visually confusing.



left, large scale  
right, detail



elements of unity  
—landform,  
dominant vegeta-  
tion



elements of  
diversity  
—pattern, rock  
outcrops, other  
vegetation

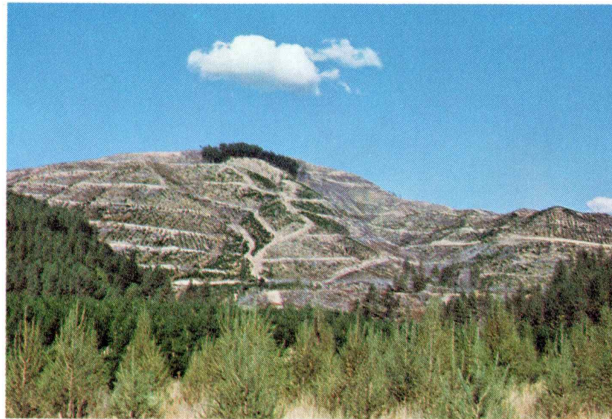


## 1 Landscape and People—naturalness and mystery

Naturalness occurs at two levels, in the components of the landscape and in the way they are arranged. As landscape components both native and exotic plants are natural. However, an undisturbed indigenous association exhibits a naturally evolved order whereas exotic plantings reflect a man imposed arrangement—naturalness is expressed in a state of freedom or one of man imposed control. Creative forestry recognises the need for freedom within order.

Mystery is perhaps the least tangible element in landscape. Mystery is that which tantalises—a point where we centre our attention and concentrate our thoughts and senses.

It is the dimension which draws the viewer in. There can be mystery in moving through an environment with the expectation of sudden views and new perspectives, or simply in the contemplation of nature.



left, man  
imposed order  
right, mystery  
fascinates

left, naturalness  
and freedom  
within order



## 1 The New Zealand Landscape

In the process of developing New Zealand's resources the landscape has been greatly altered. This alteration has rarely been accompanied by an awareness of the values being sacrificed and created.

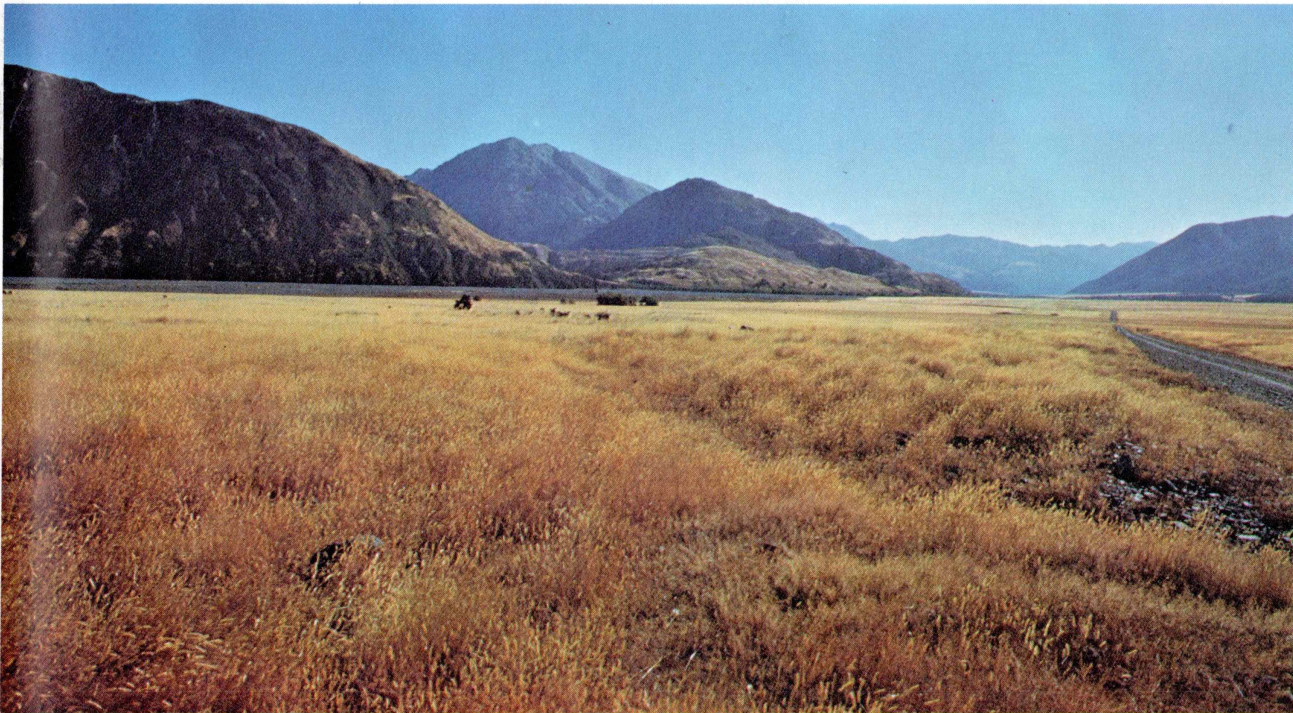
Today, when large scale changes to the rural environment are proposed, many of the natural processes and relationships are scientifically evaluated. This is basic to the protection of landscape character and quality, and essential for creative landscape development. However, the scale and objectivity of such surveys tends to obscure the small scale subtleties. The less tangible aspects of quality are often overlooked even when they are essential to the character and uniqueness of the particular landscape.

New Zealand has a considerable diversity in landscape which is unique to this country. A society evolves in response to its environment and our actions must respect the elements of quality and uniqueness in people and landscape. These photographs have been chosen as examples of landscape character variation in New Zealand.



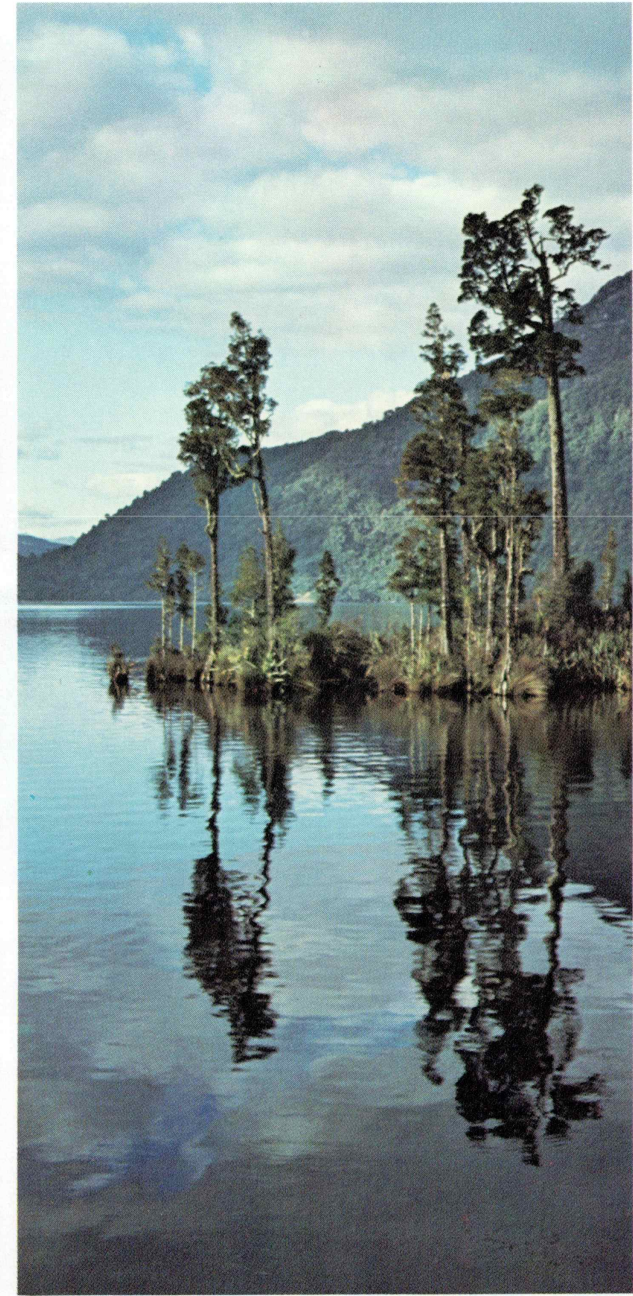


## 1 The New Zealand Landscape





## 1 The New Zealand Landscape



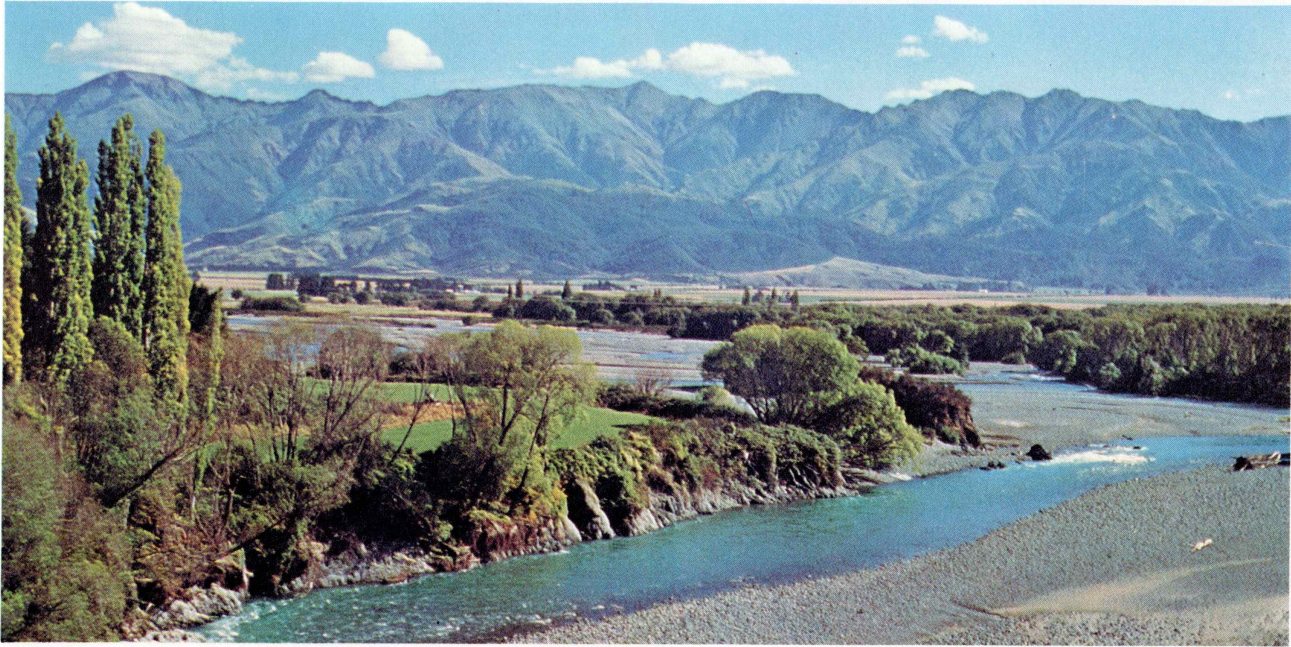


## 1 The New Zealand Landscape



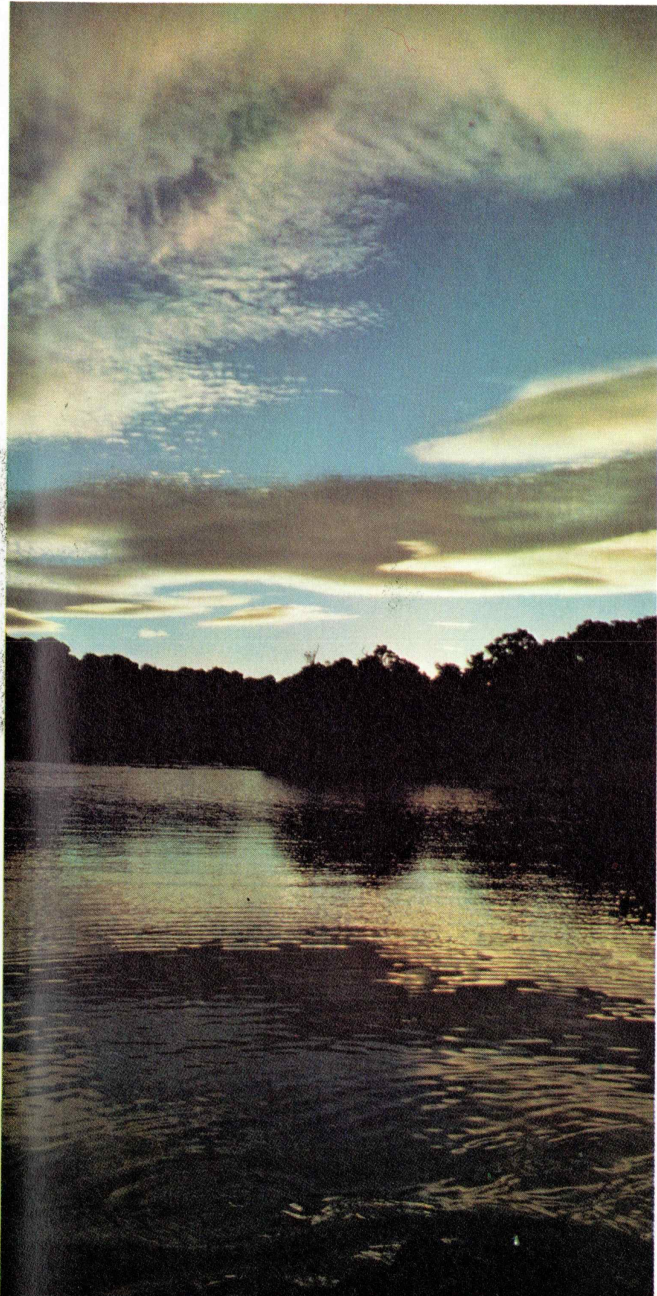


1 The New Zealand Landscape



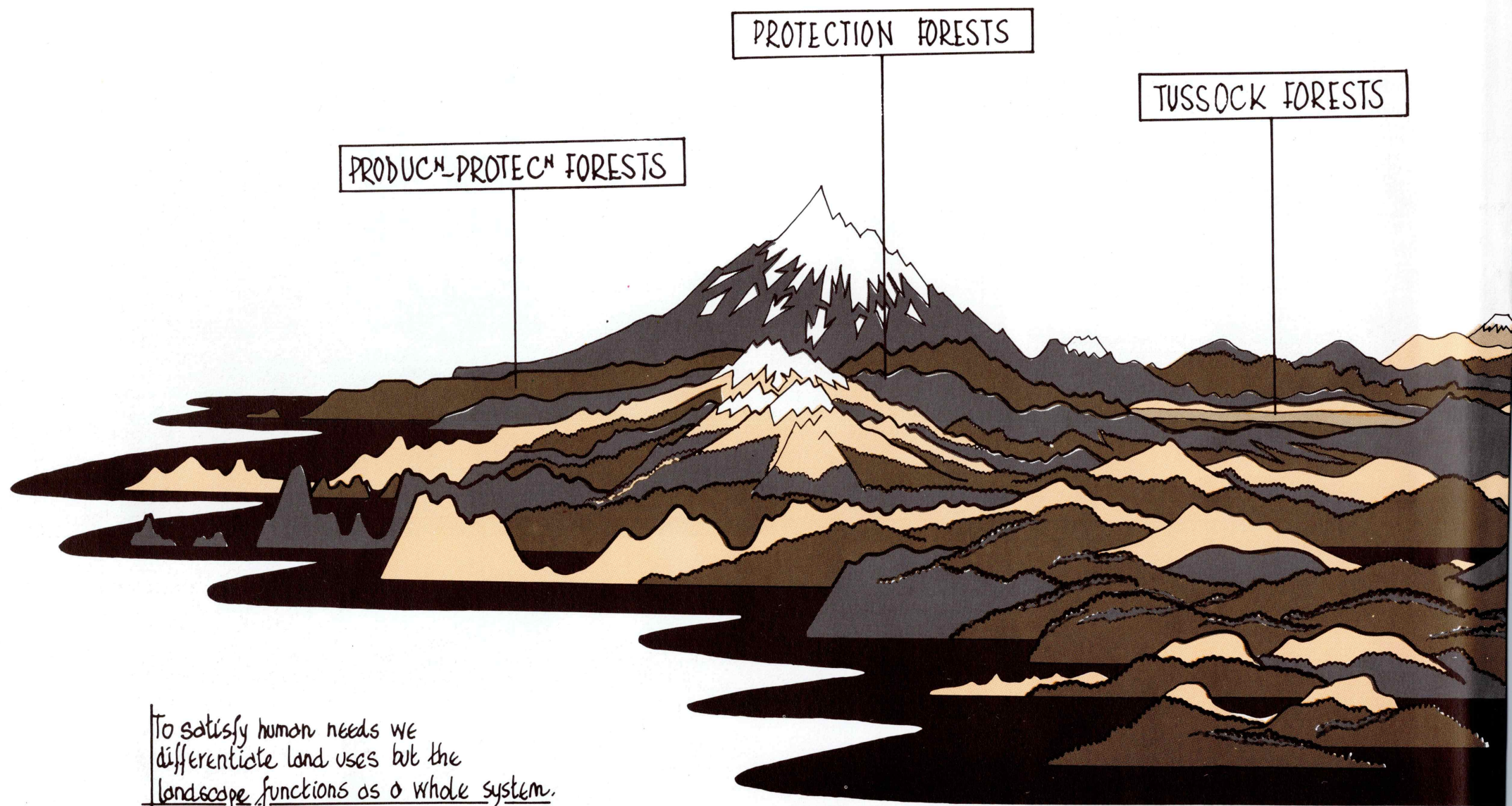


## 1 The New Zealand Landscape





# 1 The New Zealand Landscape



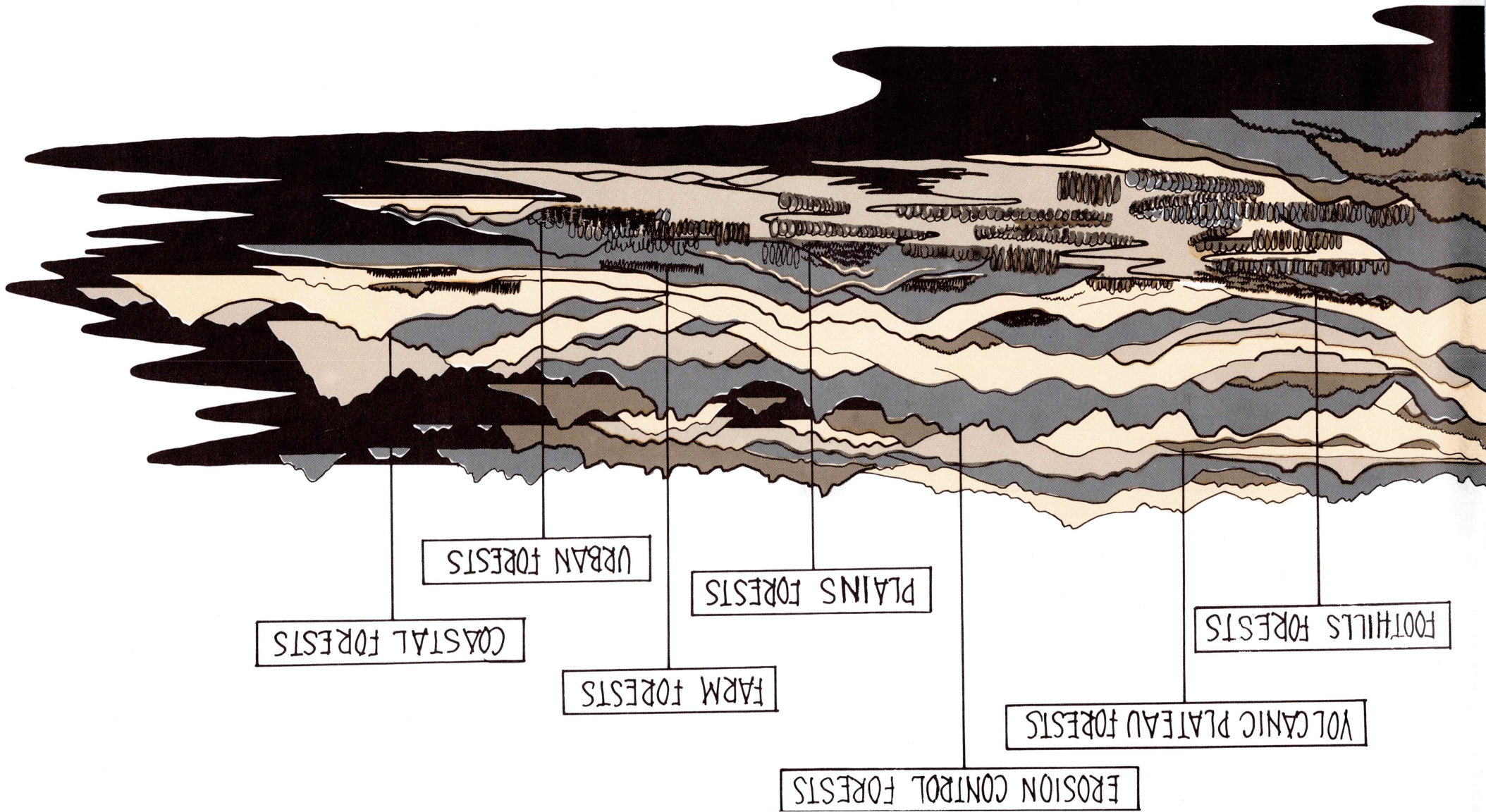
To satisfy human needs we  
differentiate land uses but the  
landscape functions as a whole system.

BOLD- LARGE SCALE  
NON HUMAN-REMOTE

— extensive activities —



Intensive activities ——— Intimate - Small Scale  
Human - Developed









The background of the slide features a low-angle photograph of several tall, slender trees without leaves, their intricate branch structures reaching towards a pale, overcast sky. The image is semi-transparent, allowing the text to be clearly visible.

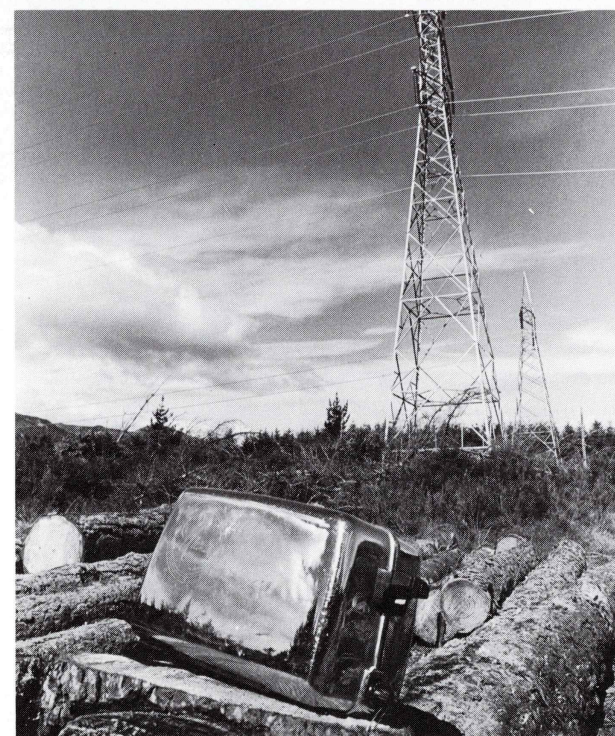
# Forests and Landscape

2



## 2 Forests and Landscape

Forests are conspicuous in the landscape. The strong vertical lines of the trees are often emphasised by being on elevated ground. Native forests are an essential part of the unique New Zealand landscape and have a timeless relationship with the land. Older exotic forests such as Whakarewarewa have become permanent features and an essential part of the community's identity.





## 2 Change

All landscape is constantly changing in accord with entirely natural processes. In many instances the nature and rate of change is being profoundly influenced by the aspirations of people and society. This process cannot be denied and is a necessary aspect of all societies.

Forests also evolve and change. Wood is removed periodically, often with long intervals between harvests, so the impact is high. Roads, tracks, clearings, power line easements, hydro works and other developments bring sudden and dramatic changes.

These man-imposed alterations are made for social gain, but the advantage to society may be realised only in the future and away from the affected area. They can be objectively described and quantified, but the values lost are difficult to describe and quantify. They are immediate, visually obvious, and may have unseen implications for the future.

Forest alteration is seen at many levels—clearfelling can be seen from considerable distances but selection logging may only be obvious from within the forest. On more subtle levels wildlife patterns can be altered and variations in water run off can cause serious water table fluctuations in downstream areas.

**The challenge for the forest manager is to protect site values while accepting some alteration as social necessity. In attaining a balance the problem is one of scale and impact. The forest manager must decide the rate, scale and pattern of change that is acceptable.**



left, Hanmer  
1890s (photo,  
Alexander Turn-  
bull Library)  
right, Hanmer  
now

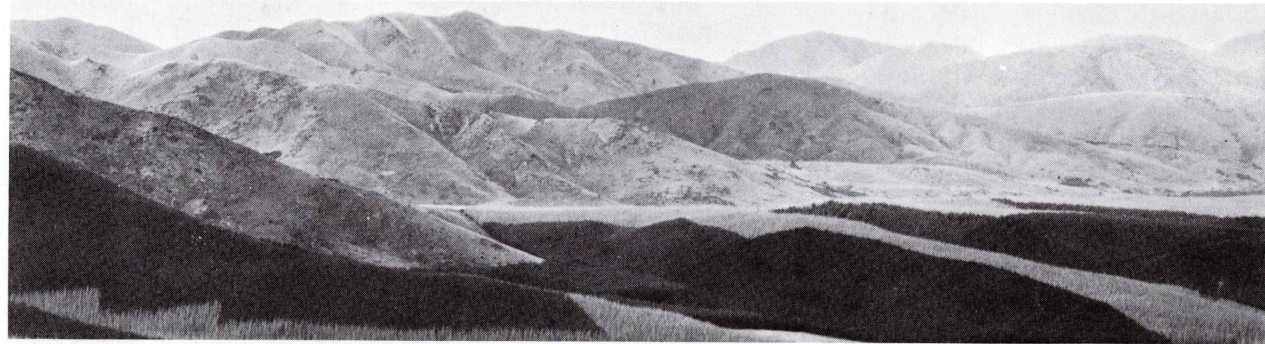




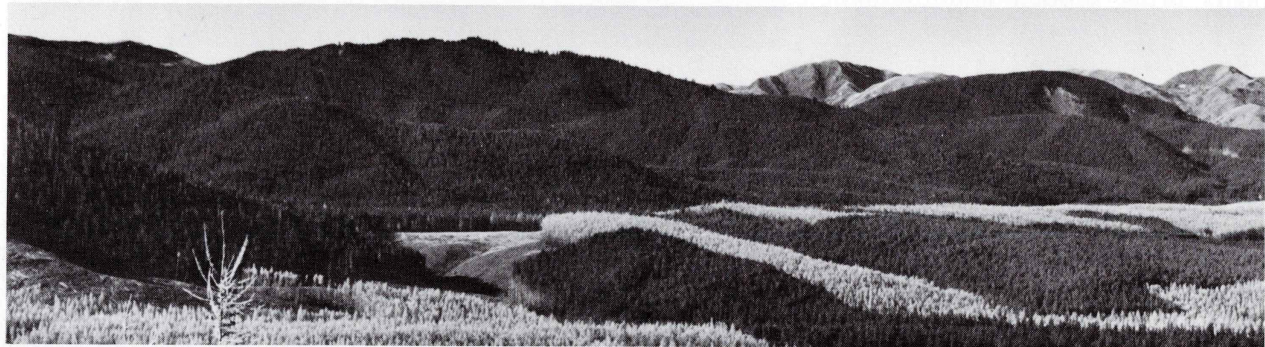
## 2 Renewal

The values of native forests cannot change over time. They are values of relative if not absolute naturalness which apply regardless of forest location or human usefulness. Any alteration in the native forests must respect these values and ensure that the renewal of vegetation occurs according to the natural sequence. This may require some site amelioration in the process of alteration to ensure appropriate vegetation recovery. In logging beech and podocarp forests regenerative requirements are a major consideration in the logging process. In aligning roads and power lines, forest edges must be restored and soil profiles re-established to ensure regeneration. In some situations renewal will be assisted by planting nursery seedlings grown from seed collected from the particular forest site.

Pioneer species will at times be planted to ensure the rapid cover of bare earth and climax species may be planted to supplement natural regeneration under a tree canopy. Considerable numbers of native species are now being produced in nurseries for such purposes as well as for the re-establishment of native cover on areas formerly open ground or scrub.



1930s



1970s



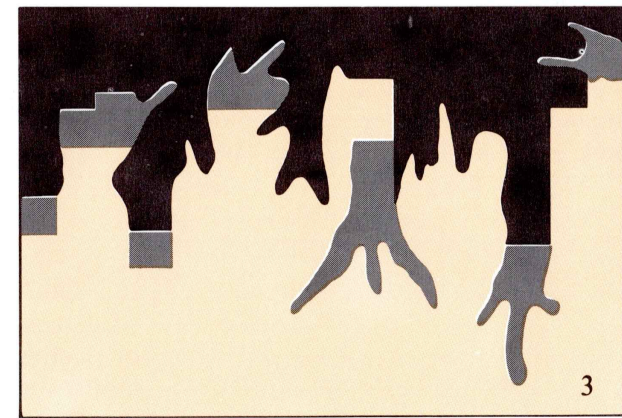
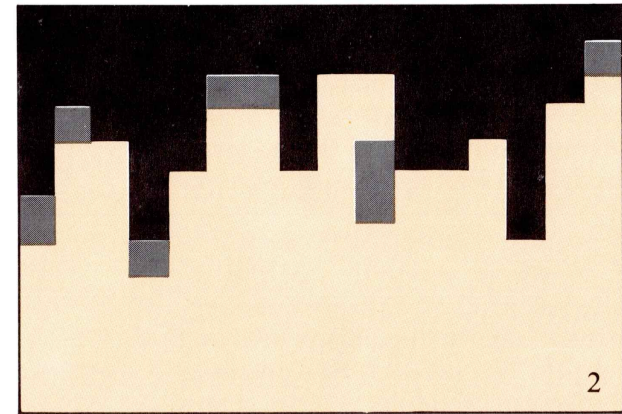
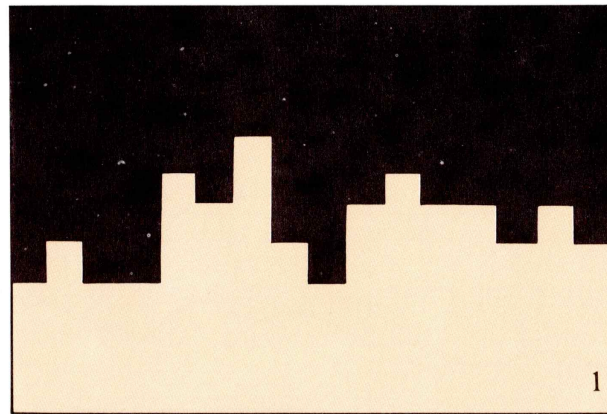
1980s



## 2 Renewal

Every landscape carries within itself a potential to evolve new relationships. Much of this potential lies within man's control. We can choose to accept the natural processes and their evolution or we can intervene in an attempt to steer the process in a direction more beneficial to ourselves. The responsible developer must have an appreciation of landscape character and be able to recognise the elements or combination of elements which confer value upon a particular landscape. If development is to proceed then whatever alteration occurs must be compatible with what exists.

In exotic forests there is a species choice in the creative and renewal processes. Exotic forests are a recent feature in the landscape and their appropriate place will evolve with time. Radiata pine is an excellent pioneer species capable of quickly ameliorating a site for less vigorous and hardy species. Although radiata will remain the dominant species and provide a continuity in the landscape and in the industries our forests support, other species will bring increasing diversity. The creation of microclimates in the new forests have resulted in the regeneration of native species. With time small pockets will expand and forests will evolve a pattern and character which combines the diversity of our native flora with that of the species we have introduced.

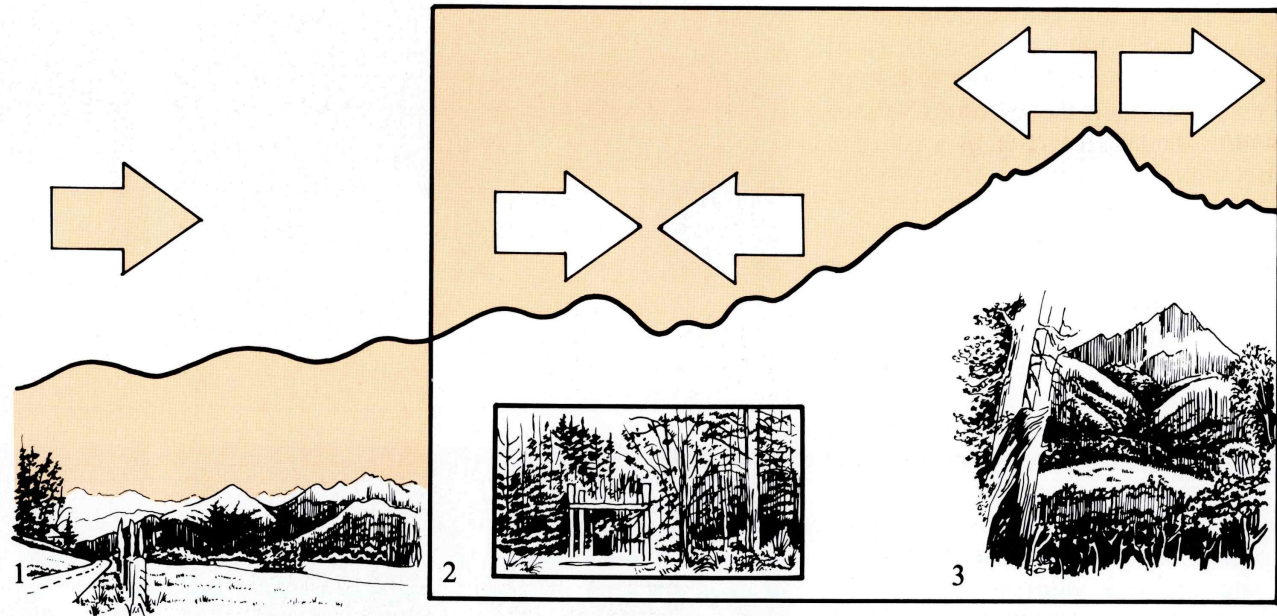




## 2 Scale

A landscape is experienced from many viewpoints. Looking at a large, panoramic landscape the viewer experiences a degree of physical detachment. His response will be mostly passive, depending on his comprehension (intuitive and emotional, or intellectual and analytical) of what he sees.

Standing within the forest, perception of the environment alters. As part of the environment, rather than detached from it, the person sees and experiences it in depth. The experience heightens as other senses are involved. Exploiting other senses evokes desires and physical actions which in turn have impact on the environment. This ranges across a whole spectrum—greatest impact in areas where people live and work and least in places of natural environment or wilderness where people go simply to 'be there'.



1. The landscape can be perceived from a point of detachment, simply as 'the visual landscape' or 'scenery'. For the motorist, who is outside the landscape looking in, the experience is limited to the sensory stimulus of the visual. The viewer makes no physical demands on the landscape.

2. For the person standing in the landscape there is attachment. All the senses come into play and physical needs influence the experience. Planning for people who are active participants in the landscapes processes requires an understanding of human as well as ecological needs.

3. Some people seek solitude in the natural environment—the 'remote' or 'wilderness' experience. Their objective is to experience a harmony—simply to be there. Physical demands are negligible—there is a certain self-sufficiency or physical detachment. At the same time there is total sensory or emotional attachment.



## 2 Scale—perception of small scale

In their responses to forest alteration people tend to be absorbed in the immediate situation and less aware of off-site gains and losses. Some will feel an acute sense of loss in seeing a tree severed from the earth, while others will be overwhelmed by the power of logging machinery, the crashing of trees, and the exhilaration of action. All feelings are legitimate and natural, but there is always conflict when dealing with the forces and feelings of creation and destruction.

Creative value is attributed according to uniqueness, scarcity, and age. Native forests have high value according to this notion. The least creative value is attributed to transient man-made utilities such as machines. In our society machinery is expendable and a recognised agent of destructive forces. All forest operations involve machinery.

On the site, the problem is to match the scale of machine and the attitude of its driver to the sensitivity of the forest. Destruction can be accepted as an honest response to social necessity if natural systems are protected and the evolutionary potential of the forest preserved. Logging waste contradicts claims of necessity and clogged waterways interfere with natural systems. Soil disturbance, root damage, and tree barking threaten sustainability.

The attitude which prevails in forest operations, influenced by the scale of machinery, will determine the quality of operations. Standards now imposed on logging set the attainment of high quality operations as their objective.



creative and destructive forces of nature and man



## 2 Scale—perception of large scale

In the greater landscape forest clearance is highly conspicuous. Felling patterns in the older exotic forests are not necessarily unsympathetic to the landscape because there were a number of constraints at the time they were established.

- Land preparation was constrained by lack of mechanical and chemical techniques.
- Roads and fire breaks were difficult to form and gullies were often left unplanted.
- Annual planting rates were small and included a wide range of species.

As a result logging coupes tend to be small and in sympathy with the landform. Although roads make significant impacts replanting and regeneration quickly soften these and other areas of soil disturbance.

In the more recent exotic forests the establishment process has ignored site, and therefore landform variation. Mechanisation and efficiency have led to a greater uniformity in approach, a larger scale, and the use of fewer species.

On flat country uniformity can be acceptable as large scale and uniform logging patterns are not necessarily in conflict with natural systems. There is still a need for diversity and adherence to natural line, but pattern and scale will be less of a constraint.



logging coupes which respect landform scale and pattern will protect natural systems

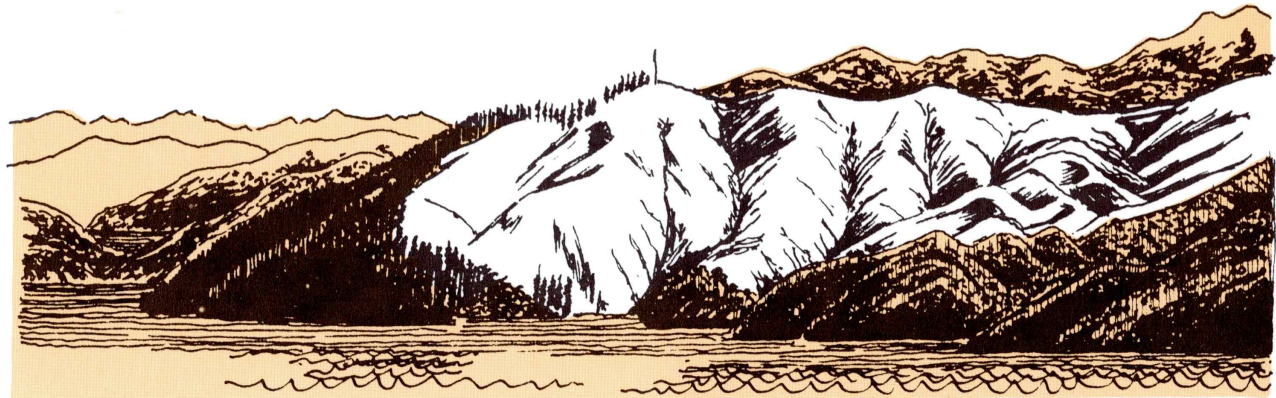
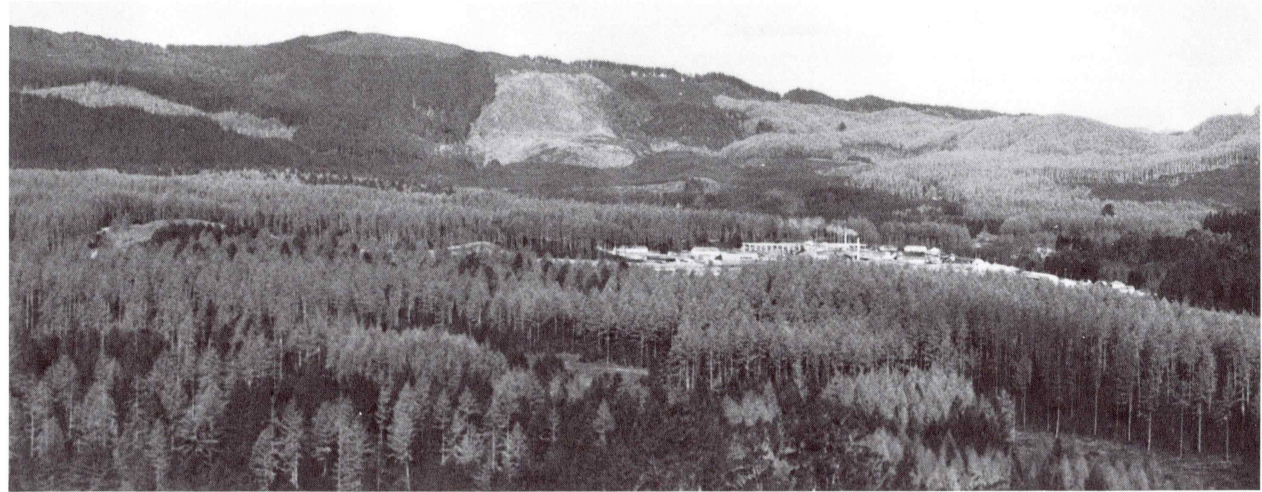


## 2 Scale—perception of large scale

On undulating country large scale planting and logging lead to major visual disruption. This has particularly undesirable impacts where planting boundaries conflict with the natural line and patterns of the landscape. In some logging situations planting boundaries should be ignored and new boundaries established. Single planting years need to be logged over a sequence of years to create smaller logging coupes which relate to landform patterns.

To some extent the physical limitations to logging and the constraints imposed to protect soil and water will result in some adherence to natural pattern and line.

During the next ten years logging will have a major impact in the rural environment, and a separate guideline to logging operations will be provided after detailed investigation.



sensitive areas  
don't absorb  
large scale  
impacts visually  
or ecologically







# Landscape Planning

3



### 3 Landscape Planning

We can ensure that new forests are established in such a way that the basic character of the landscape is preserved.

All new forest development is preceded by a period of site evaluation and a considerable amount of information will be known by the time a block is classified as forest land. Detailed and up-to-date aerial photographs will be available, and the people responsible for the development will be familiar with the land.

During site evaluation an awareness of the landscape features evolves which define its character. These features are familiar to anyone involved with land use and natural processes. In forest development plans they are normally defined under these general headings:





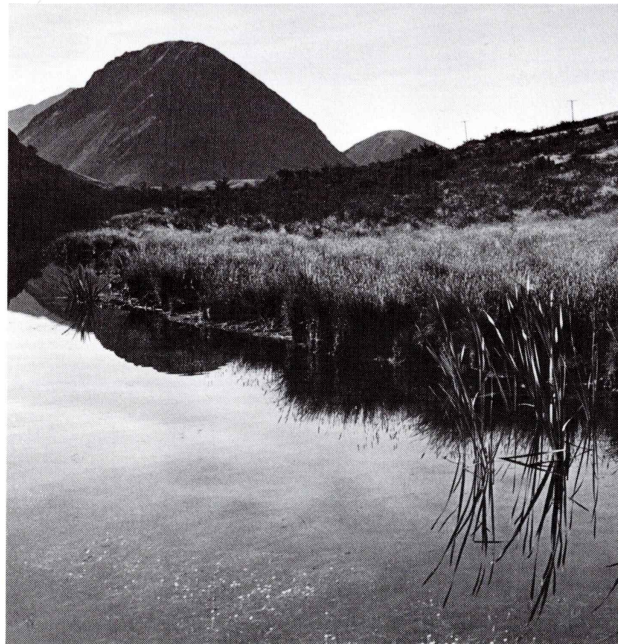
### 3 Evaluation—landform

All ridge lines are noted on contour maps, and slope maps are frequently available to assist with establishment and future logging planning. Landform patterns are analysed in terms of growth influences, particularly soil and climate, as a guide to species siting.

The landform pattern defines both the vertical and horizontal scale of the landscape. Ridge lines, the transitions between earth and sky, are visually prominent; they are an important feature of cohesion. Rock outcrops, cliffs, and volcanic features in particular confer special character and may be unique to a site.



prominent ridge lines



features of character



### 3 Evaluation—drainage

All water courses are noted on contour plans, and there will be some evaluation of peak and low flows as a guide to future engineering requirements. Development will always be constrained by the need to preserve water quality.

**Water ways are the cutting edge of the sculptural process. Every water course is unique in relation to its immediate surroundings, and a primary feature of the landscape's character. Water fascinates. Water courses have a dynamic aspect.**



a sculptural process



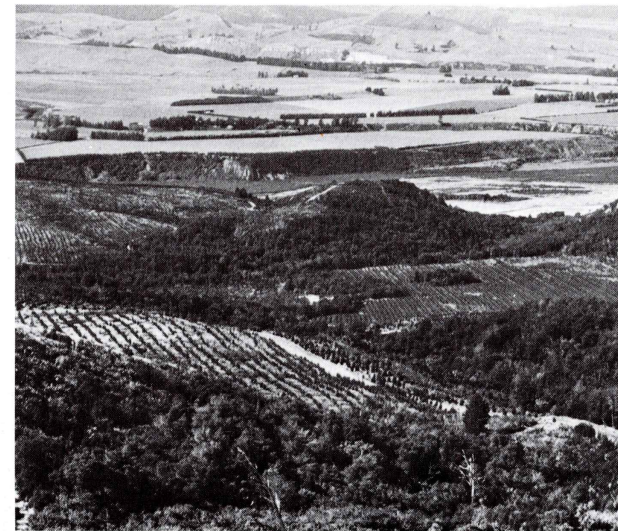
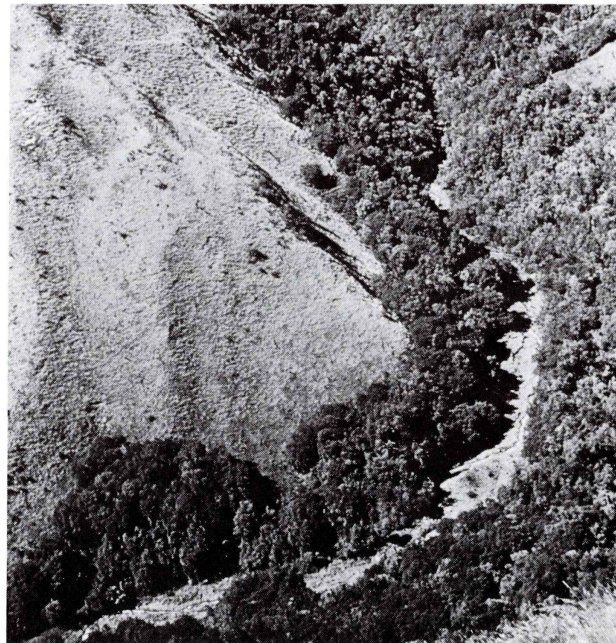
### 3 Evaluation—vegetation

All vegetation patterns, native and exotic, are mapped as a guide to site preparation. High quality native forest is reserved, and native vegetation along streams and on steep hillsides is protected.

**Native vegetation makes New Zealand landscape unique and is always distinctive in composition and distribution over a particular area. Its patterns emphasise landform and drainage. Native vegetation is a refuge for native fauna, particularly birds.**



native vegetation  
defines landform  
patterns

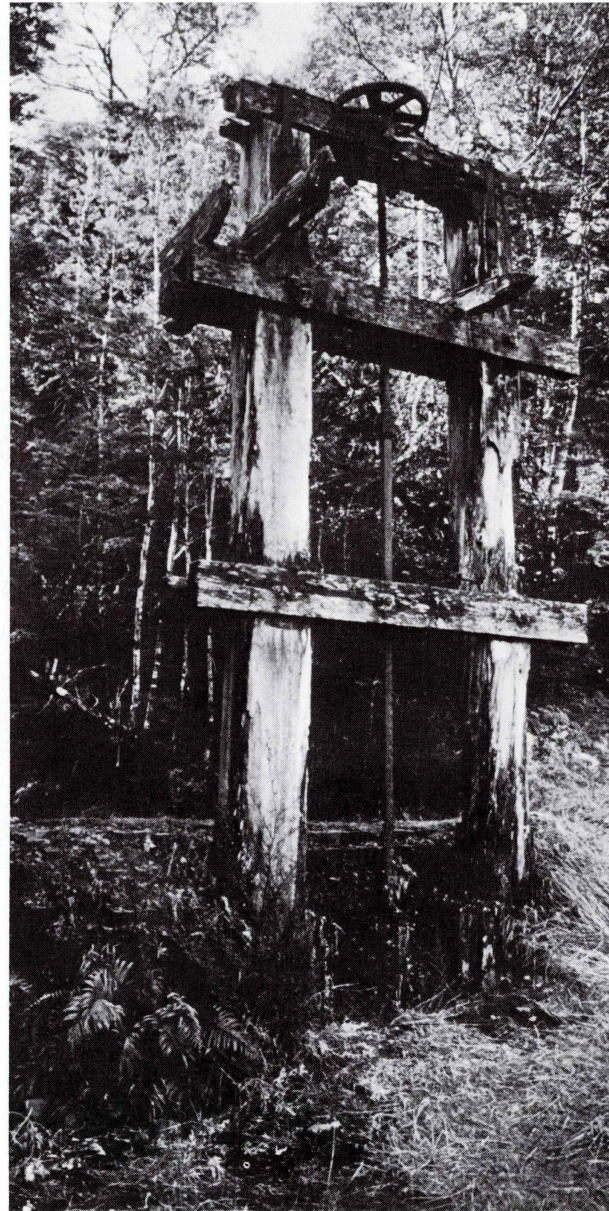




### 3 Evaluation—cultural

All cultural sites are recorded. Archaeologists may be employed to advise on a site's significance and possible preservation. Cultural sites are recognised as a resource for scientific or anthropological values or for the use and interest of the public.

Cultural sites are important links in man's evolving relationship with the land. They must, as far as possible, be preserved in the landscape context of their period and be related to their immediate surroundings. Landscape evolution is closely linked to man's cultural development. Cultural sites are a reminder of the passage of time.



reminders of  
time and change



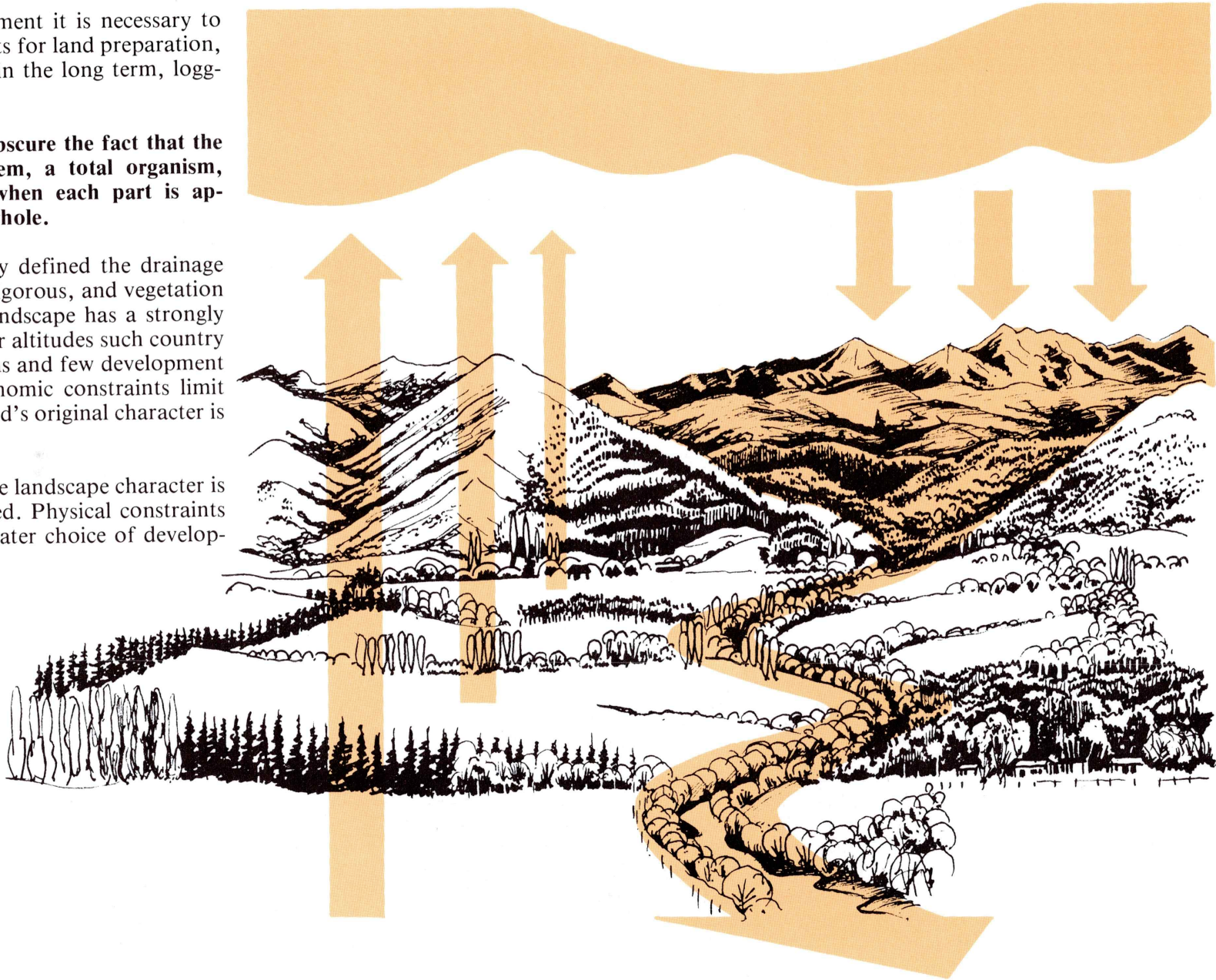
### 3 Cohesion

In planning forest development it is necessary to divide the land into sub-units for land preparation, management regimes, and in the long term, logging.

**These divisions must not obscure the fact that the landscape is a whole system, a total organism, which is only successful when each part is appropriately related to the whole.**

Where landform is strongly defined the drainage patterns are complex and vigorous, and vegetation patterns are diverse, the landscape has a strongly defined character. At higher altitudes such country will have obvious limitations and few development options. Physical and economic constraints limit development so that the land's original character is likely to be left intact.

On lower, easier country the landscape character is generally less clearly defined. Physical constraints are fewer, so there is a greater choice of development options.

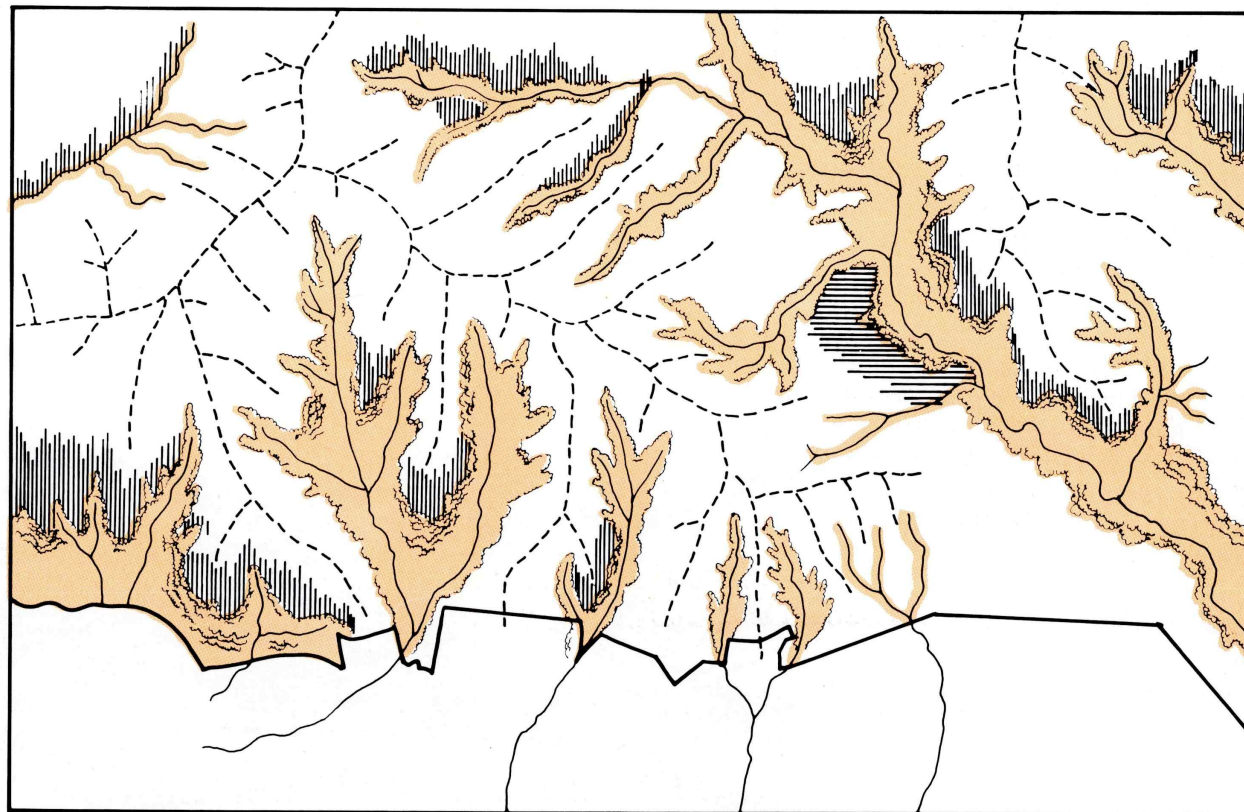




### 3 Ecological constraints

The protection of the essential natural systems, soil and water in particular, is a primary object of management on all forest land, regardless of its use.

Ecological constraints are imposed by the need to preserve the values which define character, most of which are intimately related to the natural systems. In some cases the entire area may constitute an essential natural system to be protected in its entirety from any alteration other than natural processes.



Ecological and Cultural Constraints.

- Soil and water values are the first consideration in the process of alteration.
- Vegetation essential to the maintenance of these values must be protected.
- Steep slopes where soil disturbance must be minimised are identified—vertical lines.
- Wildlife values are identified and protected.
- Areas having cultural values are protected—horizontal lines.

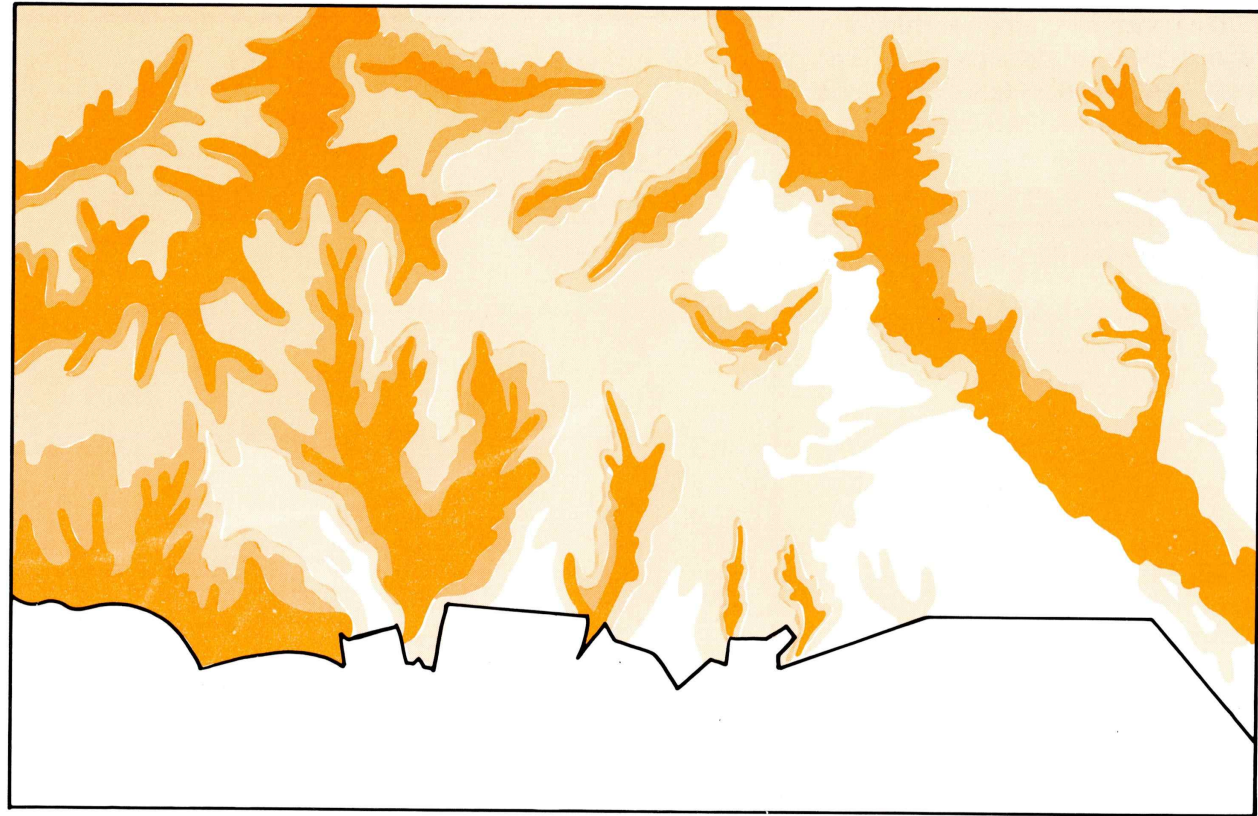


### 3 Economic constraints

Economic analysis deals in very large units, whole parcels of land, using average costs and realisations on the assumption of land uniformity which does not really exist.

Landscape awareness is concerned with difference so is in direct conflict with any evaluation which assumes sameness. When we apply economic analysis to each ecological niche, identified using a landscape perspective to highlight difference, certain patterns are apparent.

Exposed areas of poorer soils reflect low economic viability, as do steep bush-covered sites with high development and logging costs. At the other extreme are sites where the potential economic gains are well above average and which have a greater range of land use options



#### Production Constraints

- Potential investment returns vary from place to place within the whole block.
- Deep gullies will be expensive to establish and log.
- Exposed ridges with poor soils and rock outcrops will be difficult to establish and crops are likely to be slow growing and of poorer quality.
- A pattern of economic potential can be defined—the highest potential is shown in light tone, the lowest in dark.
- At lower altitudes on easier slopes of better soils the potential returns will be highest. On these sites other forms of land use can be considered. For example grazing may be integrated into the forestry process and horticultural crops considered.



### 3 Development

There are then two perspectives to be considered in development planning:

- an ecological perspective which defines the areas where natural systems must be protected and sustained.
- an economic perspective which defines areas that are either unacceptable economically, or have potential for some more intensive form of land use.

When these perspectives are combined a framework of areas emerges where forest development or alteration is unacceptable.



Framework of Constraints

- When areas over which there are constraints (ecological, cultural, economic) are identified and combined, a framework is defined.
- The framework defines areas over which alteration is generally unacceptable.
- In most situations the framework will include those areas and features unique to the place and essential to the character of that landscape.
- Development must respect the framework and adhere to the natural patterns defined by it—the framework is depicted in colour.



### 3 Development

Development which accepts this framework will be ecologically and economically satisfactory, and rational land use is ensured. At the same time development will be in harmony with the character of the landscape.



#### Integrated Development

- A development pattern is illustrated in broad outline.
- Production forest areas are defined.
- Vertical lines cover areas where soil disturbance must be minimised and longer rotation, possibly suited to selection logging, must be used.
- The area having a grazing potential is defined and open space preserved.
- Other than major production species are planted on better sites to provide shelter and yield a diversity of products—these serve to enhance the quality of cultural areas and integrate development with the surrounding landscape.
- Areas of recreation value are defined by the framework and enhanced by development.



### 3 Integration

The level of enjoyment people gain from a landscape reflects the quality of the landscape's relationships—the extent to which the patterns relate to each other and to the whole scene. The main expectation is for naturalness, expressed in diverse patterns within a unified, cohesive character.

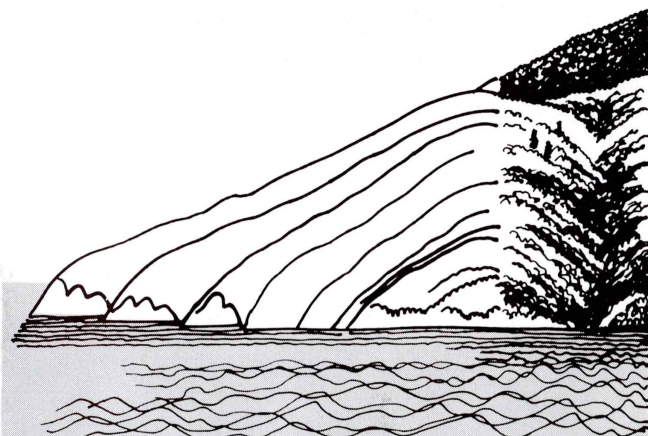


natural patterns  
of diversity  
within a cohesive  
character

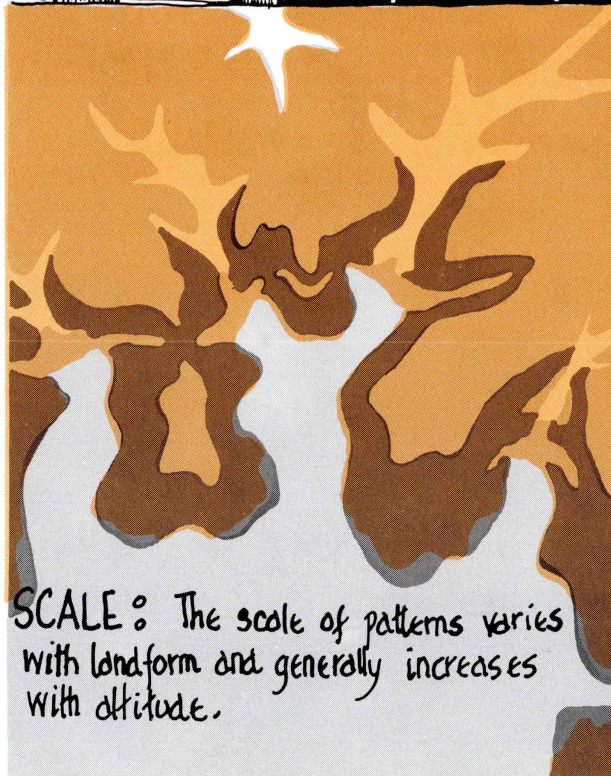
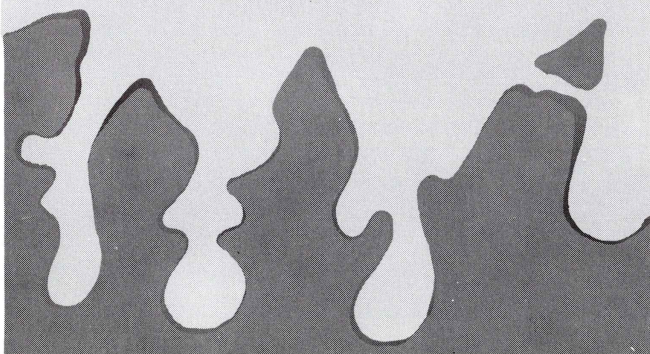


### 3 Integration—character

The most obvious patterns are defined by the landform. When altering the landscape by establishing or modifying a forest the main factors to be considered in the imposed patterns are form, scale, and colour.



**FORM :** Any alteration in the landscape should observe the line and form of natural patterns. Landform is generally more complex in valleys and on coastlines.



**SCALE :** The scale of patterns varies with landform and generally increases with altitude.



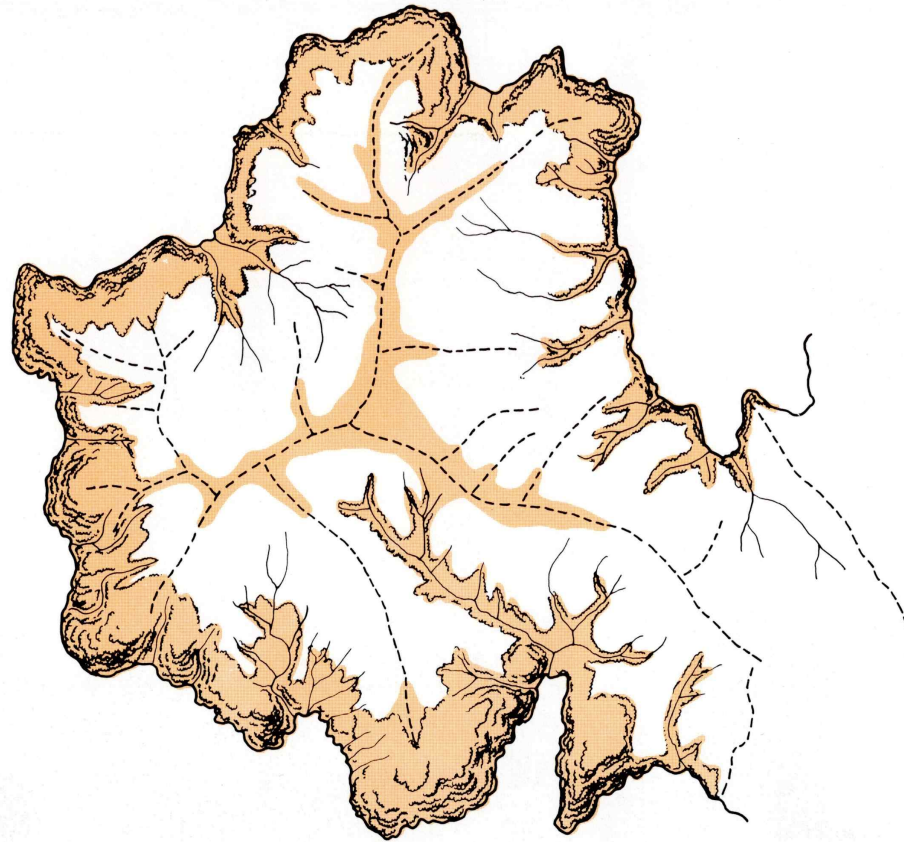
**COLOUR :** Seen from a distance, natural vegetation reads as bold uniform patterns. Contrast occurs only between distinct vegetation types. Greatest colour diversity occurs at lower altitudes and this is often increased by exotic plantings which are associated with settlement.





### 3 Integration—character

The **form** of major patterns is defined by the framework previously outlined. The landform, river systems, soils, and vegetation are a response to natural forces. Their form must be reflected in the form of any alteration. Although the new cover may be exotic, the patterns need not be unnatural. The form of logging coupes should also respond to natural landscape patterns.





### 3 Integration—character

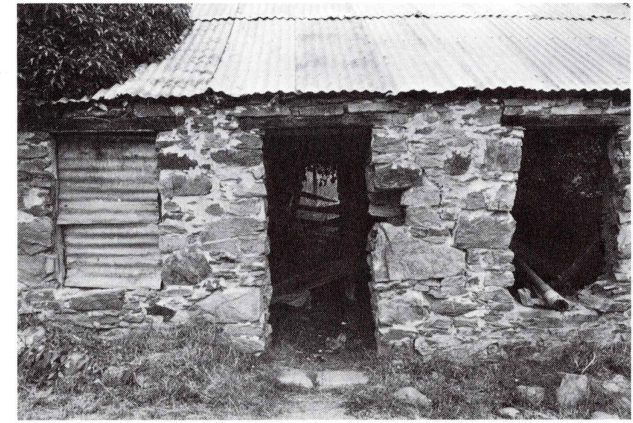
The **scale** of patterns imposed is important. The scale of the planting framework and any alteration within it must reflect the scale of patterns in the surrounding landscape. High country landscapes demand large scale simple patterns based on major landforms.

At lower altitudes the landscape has already been vastly altered and is becoming more human and exotic. The patterns must conform to the land form but the scale should decrease as more species are used with agricultural and horticultural development. The lead here is not simply from the natural landscape, but also from co-operation between land users to achieve rational land use patterns which combine to form a satisfactory visual landscape.

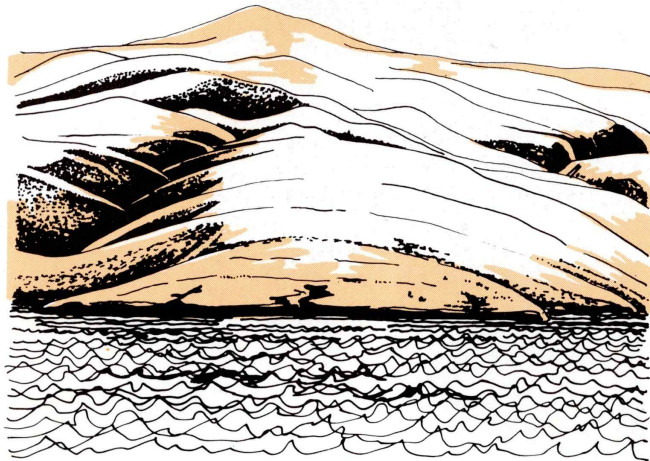




### 3 Integration—character

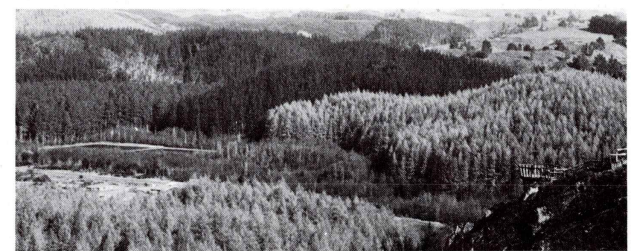
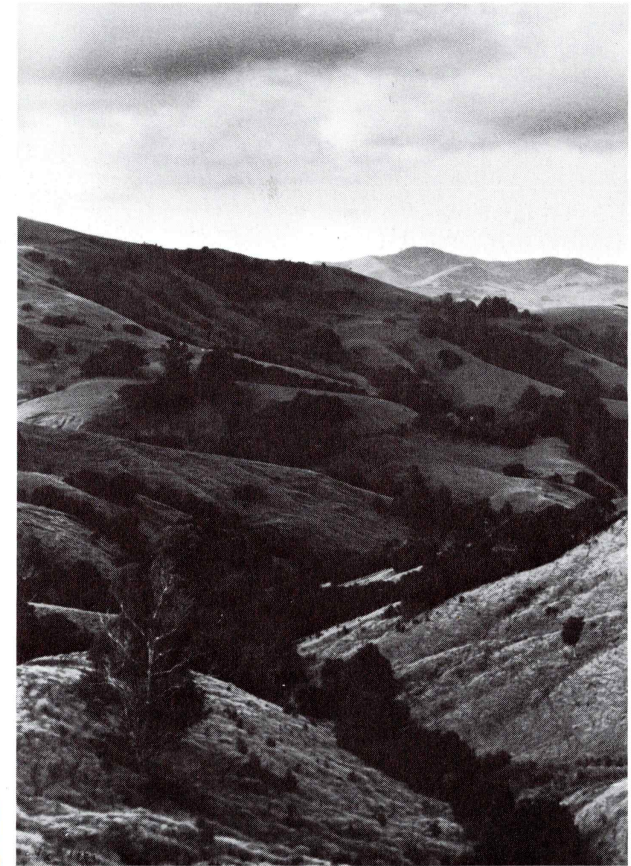
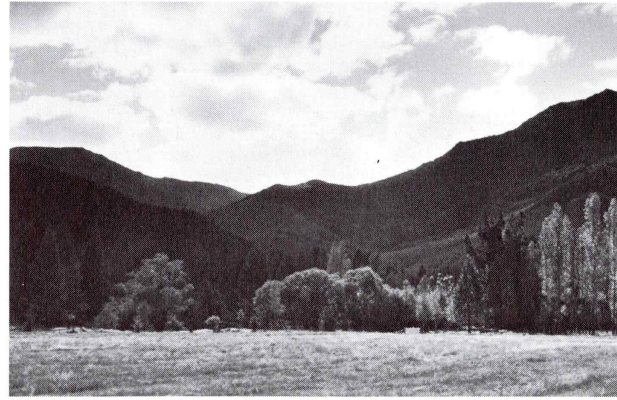


simple harsh  
landscape  
reflected in  
structure





### 3 Integration—character



left, small scale  
diversity to large  
scale simplicity

right, intimate  
scale—pattern  
defined by native  
remnants

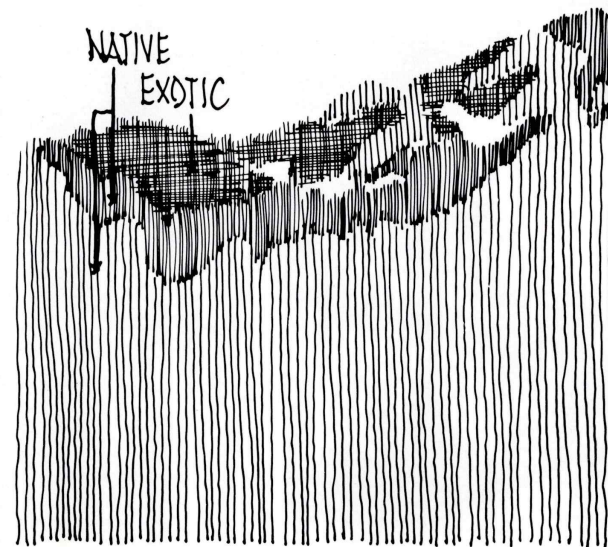
man imposed  
patterns



### 3 Integration—character

The **colour** of pines is not incompatible with native bush and scrub, but English hardwoods and the more 'ornamental' conifers often are. At the middle and upper limits of exotic afforestation the pines and other conifers of similar colour can be successfully related to the indigenous cover if the scale of planting patterns is appropriate and **sufficient space between exotic and native cover is left for the transition to occur.**

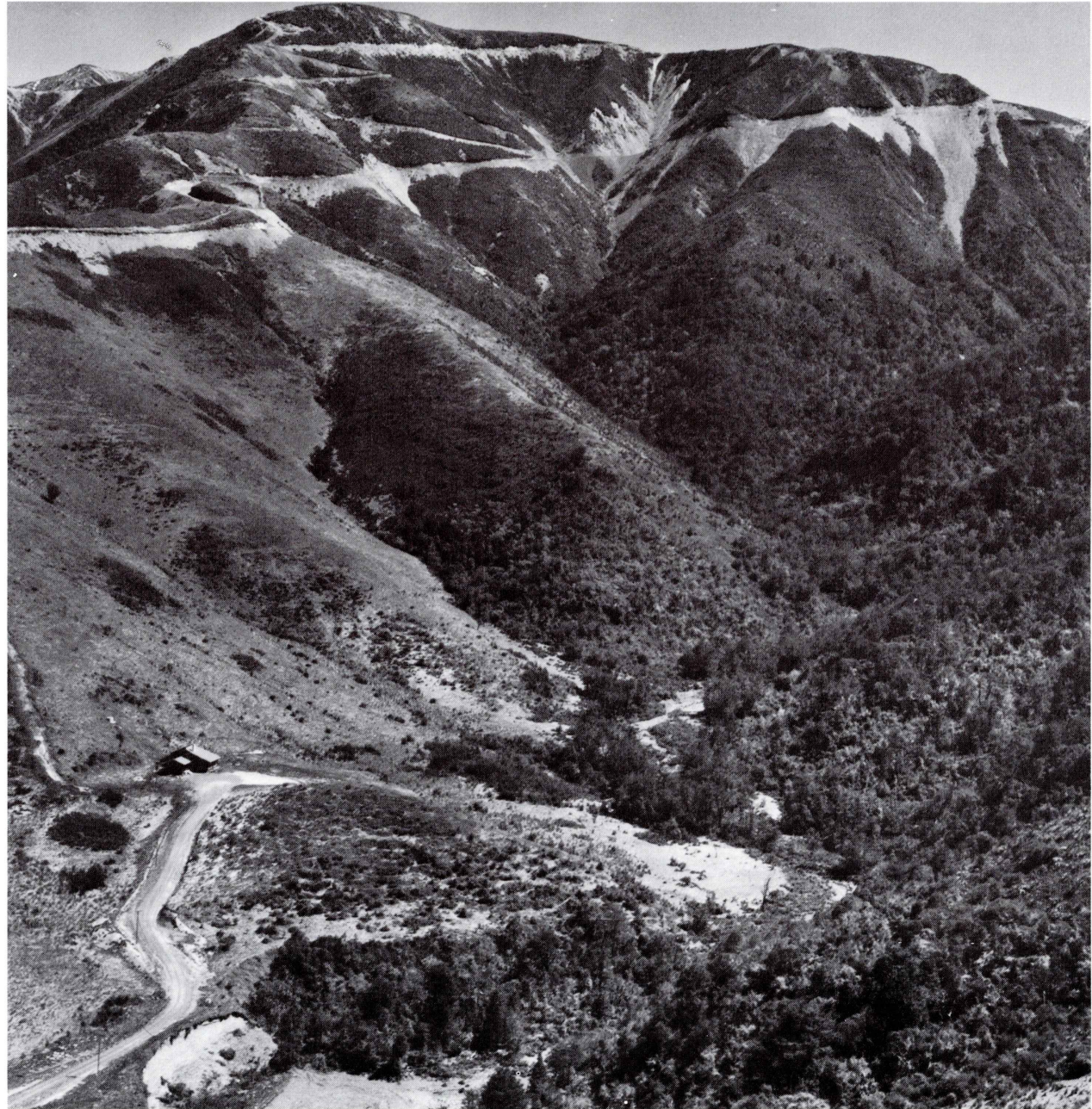
Diversity is the key at lower levels. The edge between forest and farm will be more subtle if species found in the developed farm landscape are used.





### 3 Integration—access

This is the first stage in the development process, and must be considered in relation to both forest management and recreational use. Both foot and vehicle access should be planned from the outset. Vehicle access may be established before planting, or an alignment left unplanted for later road formation. Obviously road works must disturb soil and water as little as possible and conform to prescribed engineering standards.



visual disruption  
(photo, V. C.  
Browne)



### 3 Integration—access

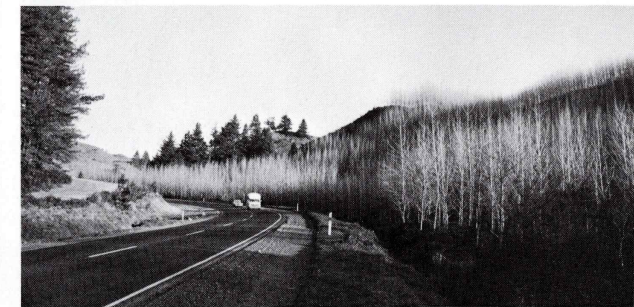
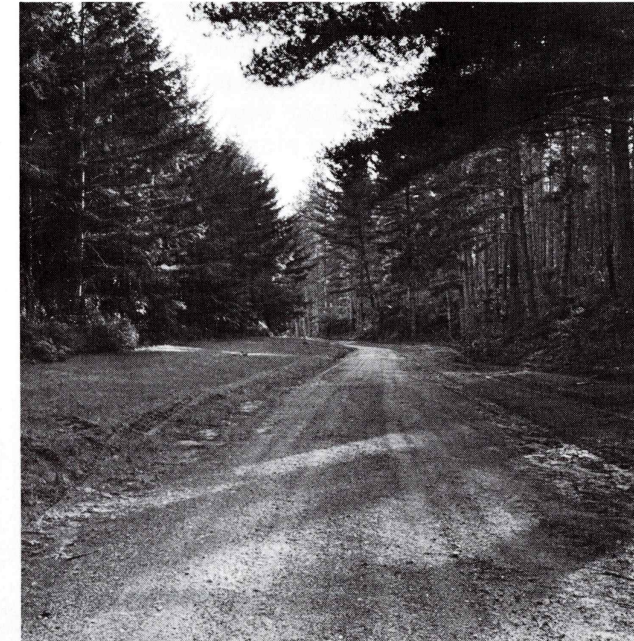
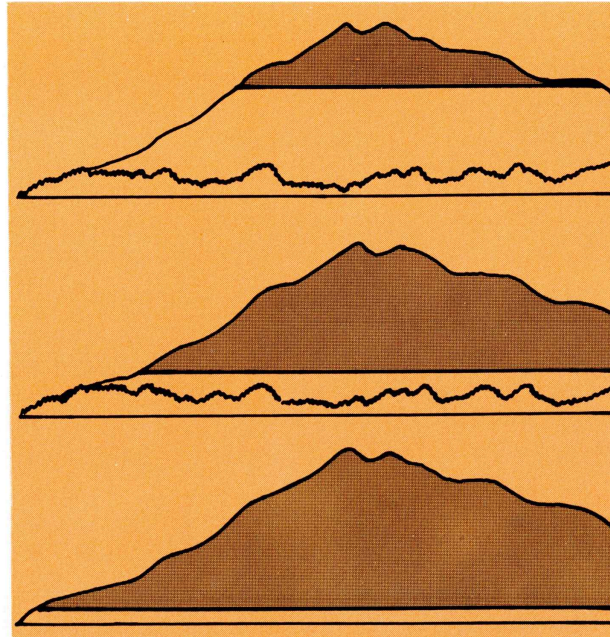
Roads are very much a part of the landscape, and must assume some sympathy with it.

Roads must respect the landform, and to some extent engineering requirements demand this. As far as possible, roads should adhere to the natural contour and be responsive to the form of the land. Skylines should not be disrupted and water courses should be bridged with minimal impact.

Roads should be kept off visually conspicuous faces but if this is not possible, kept low on the face.

Long-term use should also be considered and roads sited to suit the visual effects of logging as well as its physical requirements. Their subsequent use for recreational access may, where views from them are important, suggest an adjustment in alignment to maximise this opportunity.

Using a forest drive offers experiences of both the immediate and the greater environment—these can be good or bad according to the road's location and alignment. From the outset roads must be considered in relation to qualities which will evolve with time.



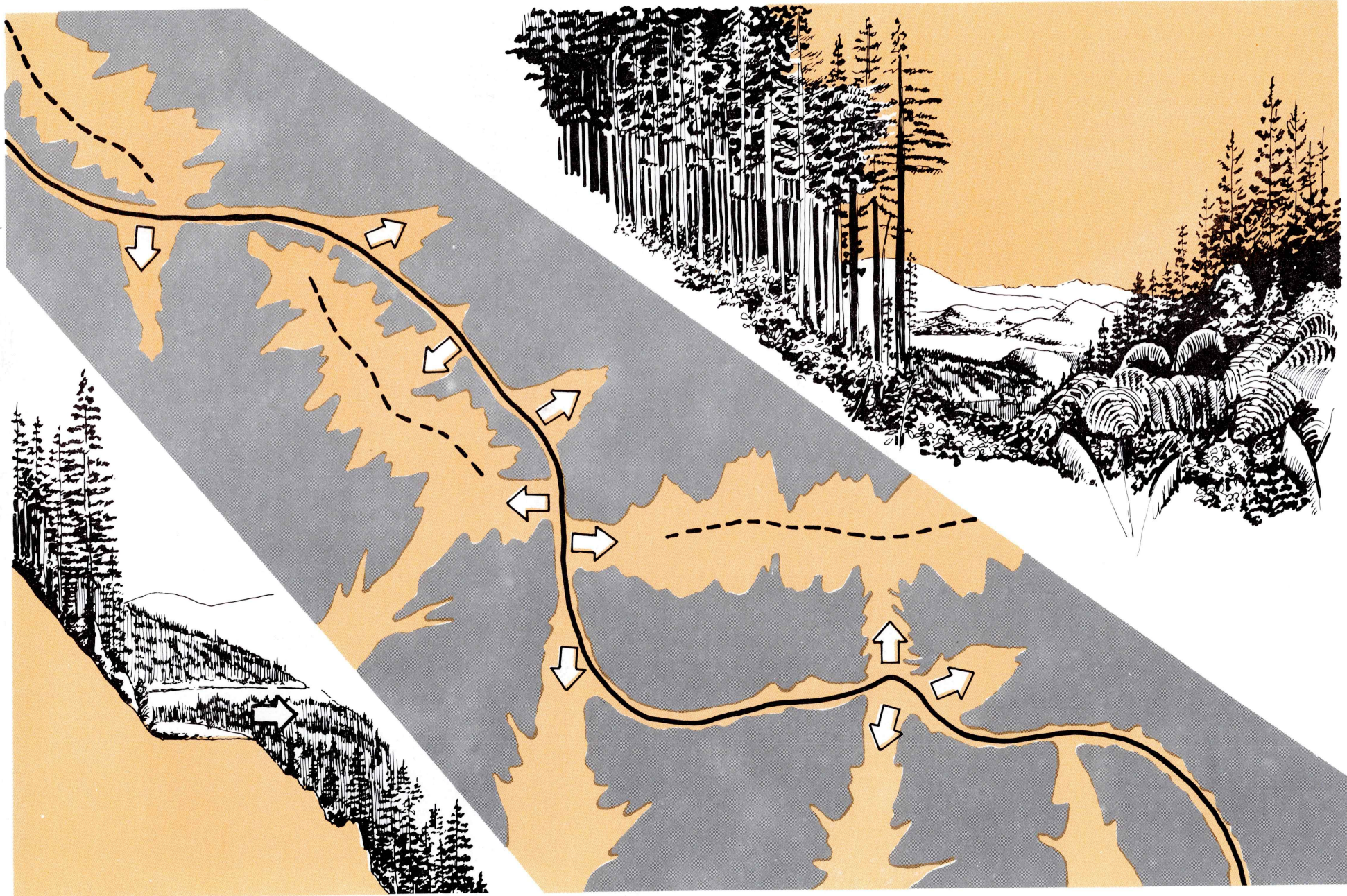
left, road location  
—most disruptive  
—least disruptive  
—destroys transition  
right, enclosure

left, monotony  
right, irregular stocking

right, changing perspective



### 3 Integration—access



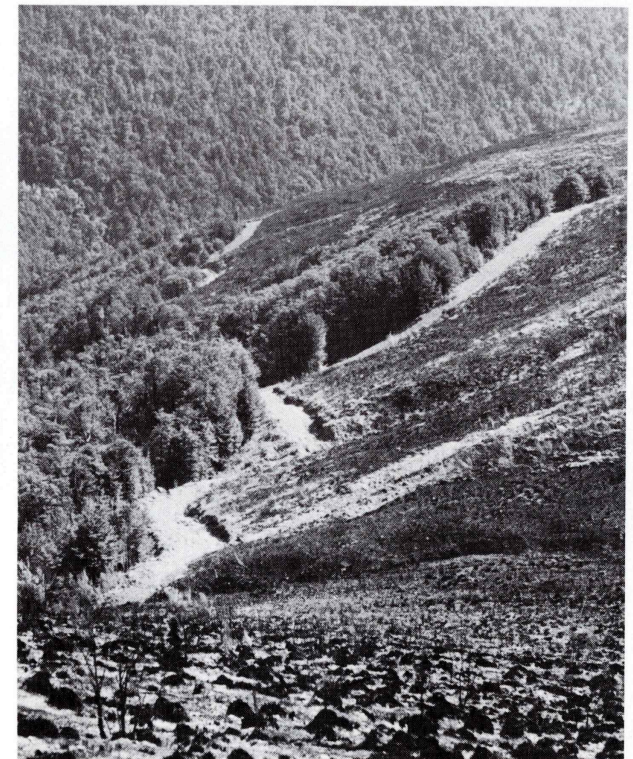
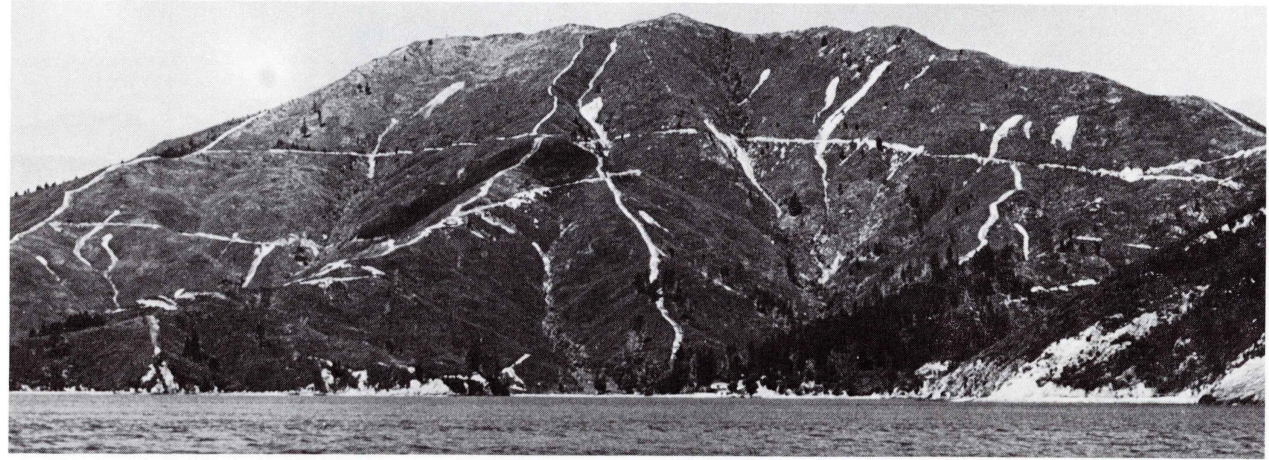
interest is created  
by changing  
perspectives and  
movement from  
openings to  
enclosures



### 3 Integration—firebreaks

Like roads, firebreaks can impose unsympathetic lines on the land, and the same principles should apply in their formation. Firebreaks can have very long-term effects when situated on ridges and used as compartment boundaries. The unplanted strip is totally at odds with natural pattern and line, and, if it is a boundary between compartments which are likely to receive different treatments, it creates a visual dislocation of the worst kind.

A system of live firebreaks can be formed by planting the valleys in longer rotation deciduous species. Larch, walnut, ash, or plane will retain, and possibly extend, the existing native understorey. This divides the forest into logical fire management areas based on landform and gives protection to streams during future logging on adjacent shorter rotation production sites.



left, initiative  
saves money,  
saves trees—a  
better transition

right, is this  
firebreak  
necessary?

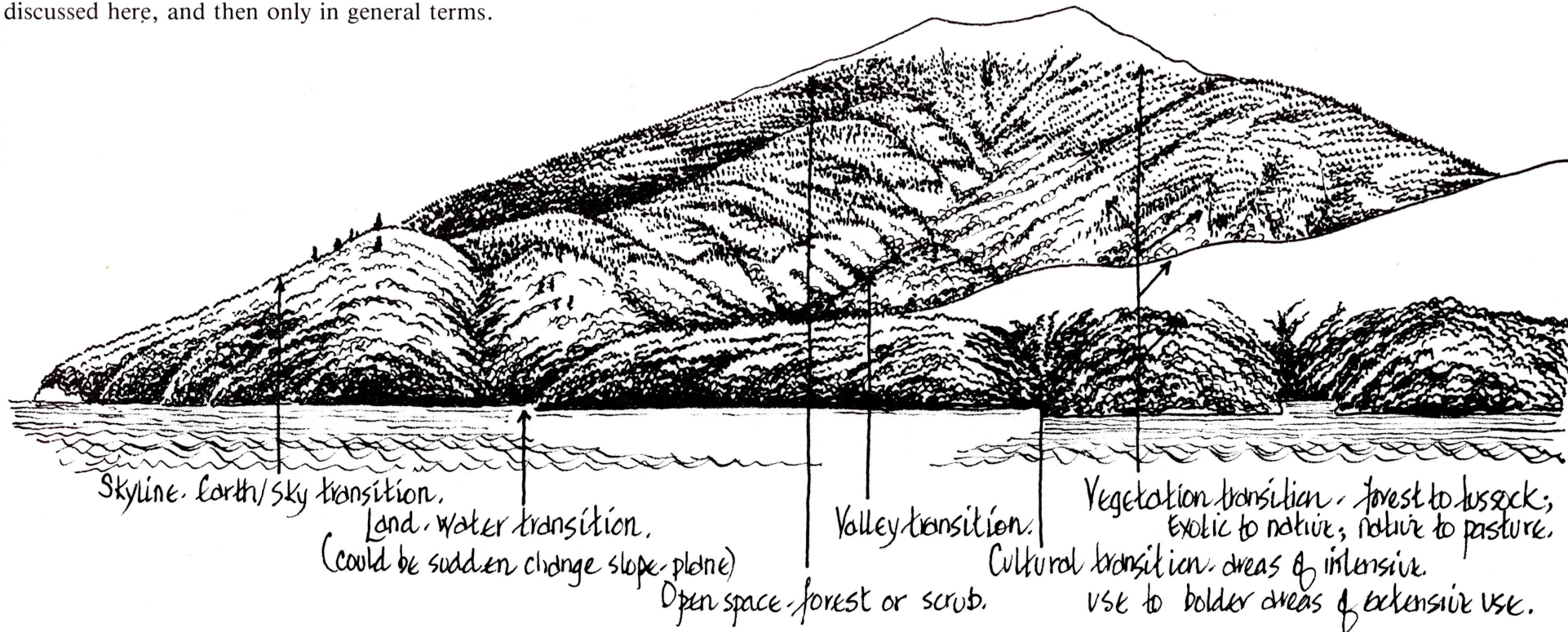


### 3 Integration—transitions

These are areas of change in land use, in landform, or in a more general sense, space. Transitions are areas of tension and the eye is drawn towards them. In an ecological sense they are frequently the centre of greatest diversity and activity. They are often areas of human interest and therefore places for recreational activity.

**The aim in treating all transitions is to create a harmonious relationship between spaces or patterns so that the change flows with the landscape and does not arrest the eye by its discord.**

There are many transitions in the landscape and each is unique, so only the more important can be discussed here, and then only in general terms.





### 3 Integration—transitions

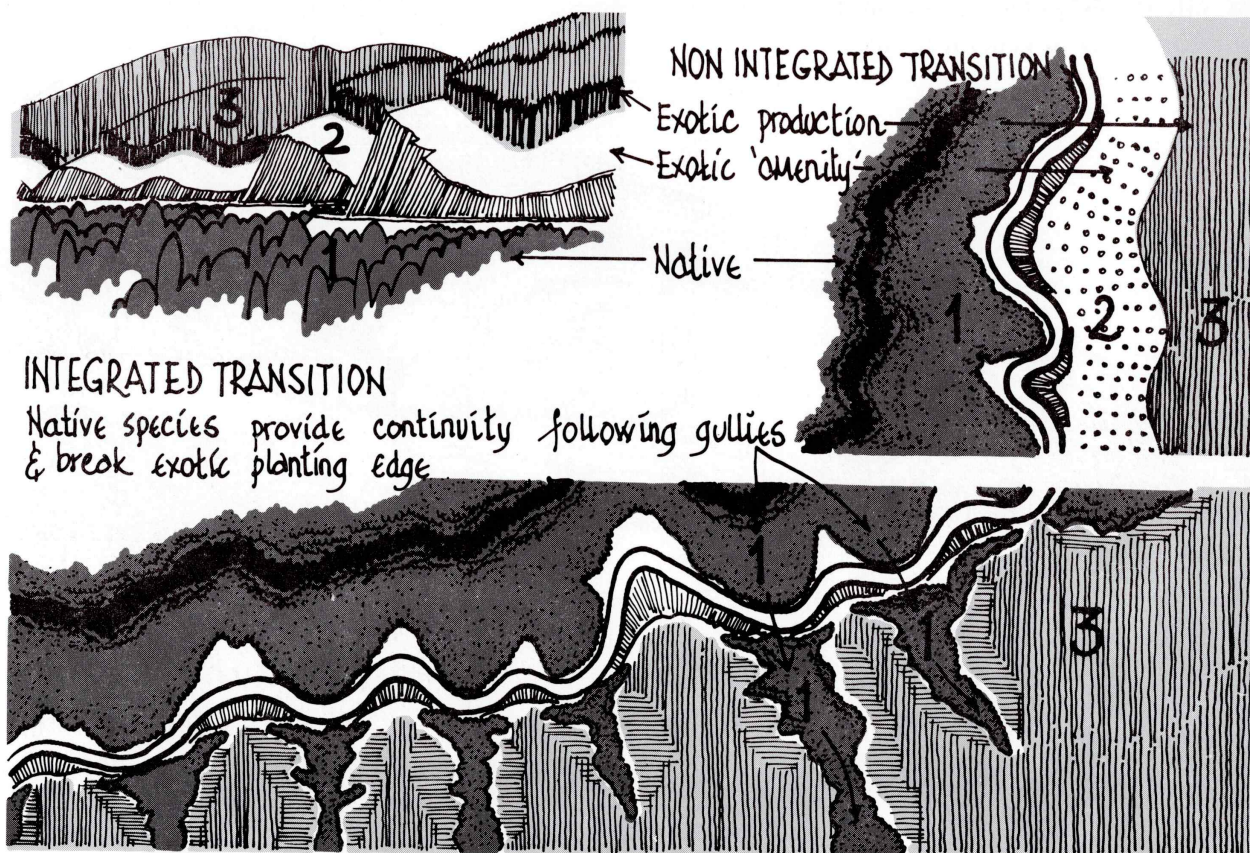
Transitions are often wrongly treated because they are considered from the point of view of the small scale, as seen by a person who is close to or right on the transition. A diversity of species is added on the stand edge to create interest and break up the monotony and uniformity. When seen from a distance, on the larger scale, such planting draws attention to the transition because it relates neither to one side nor the other. Contrary to the planner's intention, "amenity planting" can create discord. Amenity planting can become yet another pattern, inharmonious with those on either side. A successful transition will incorporate something of the character of either side.

The most significant transitions are from forest to open space because the contrast gives greatest emphasis to the edge. At the upper altitudinal limit of forests, or in large scale open tussock and scrub areas, there is bold scale unity and simplicity. Stand edges can be broken to conform to the land-form, and any species introduced as variation to the dominant one should be planted in large numbers. Mortality, differing growth rates, and regeneration will help soften the boundaries over time.

At lower altitudes the transition will usually be from forest to farm. The surveyed boundary between the two may often conflict with land patterns. This can sometimes be reconciled by land exchanges. As forest grazing becomes more widespread it is possible to incorporate open space and low density stands in the forest to achieve good land use and blur the transition between the uses.

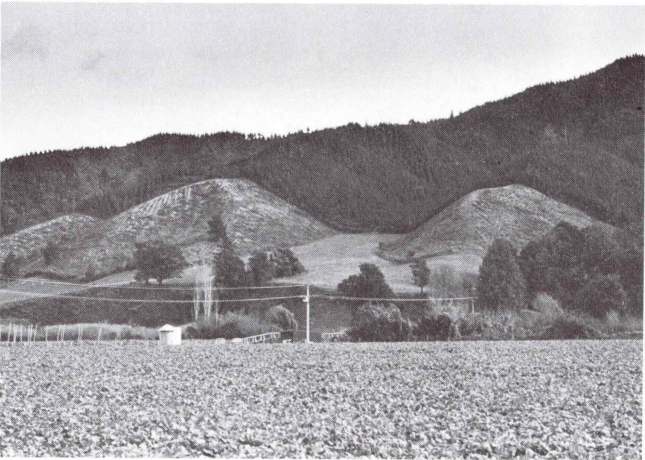


rigid visual barrier—how do you manage this long term?

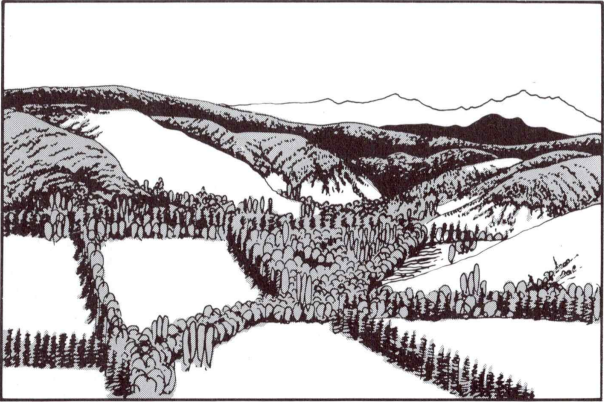




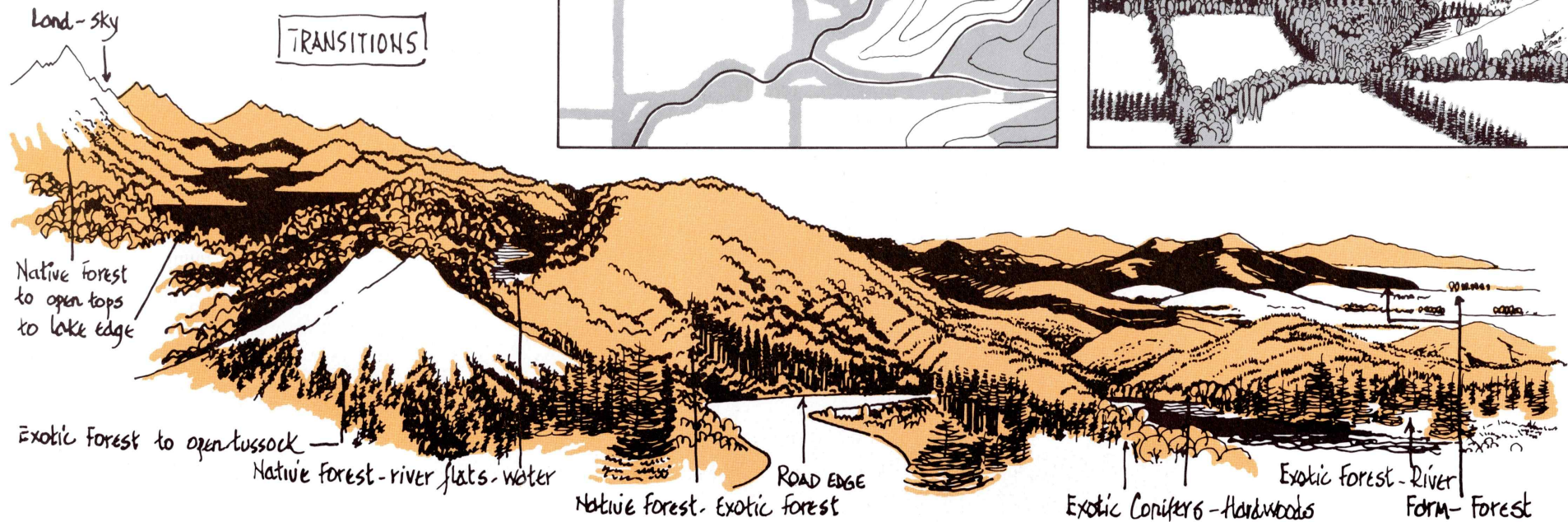
### 3 Integration—transitions



survey boundaries contradict ecological boundaries



land exchanges and multiple use create more satisfactory transitions



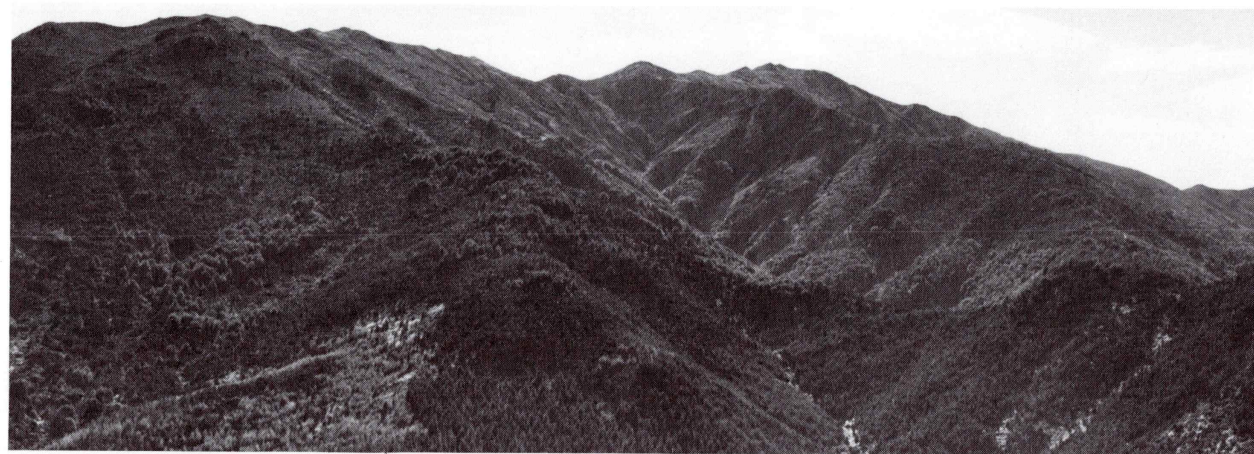


### 3 Integration—transitions

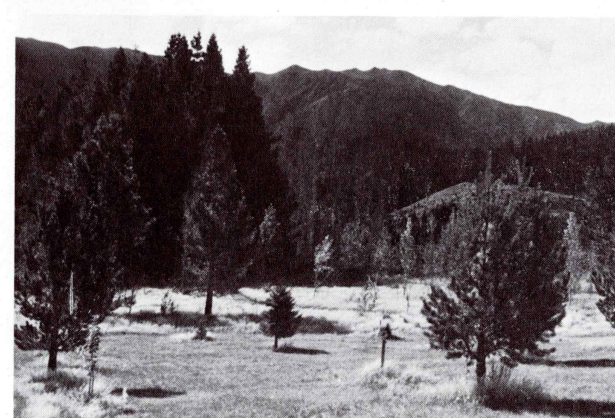
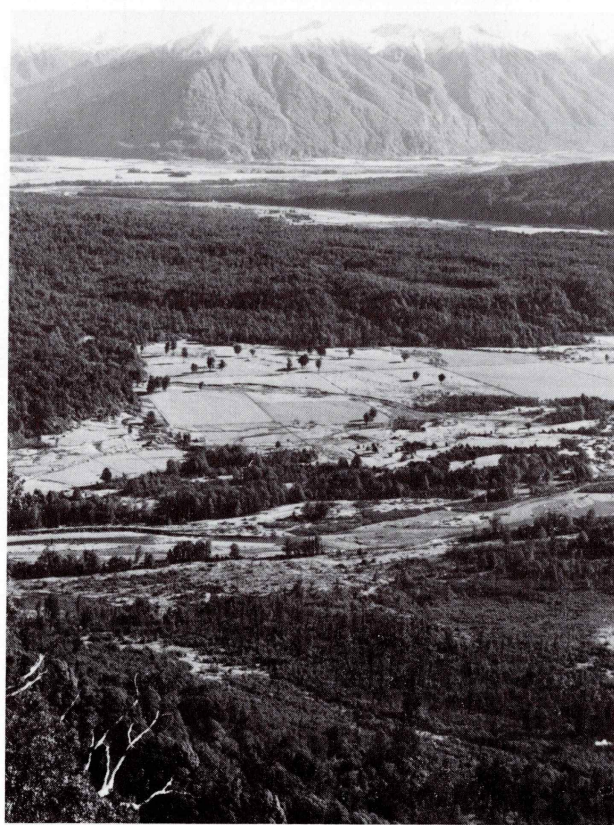
At lower altitudes the opportunities to use a wider range of species increase, and this is often reflected in adjacent agricultural land. Major production species are sited in accord with landform patterns simply because they are sited according to their needs—if a species requires a damp, sheltered, southerly aspect then its location on such sites conforms with a natural pattern. All species, whether grown for wood, nuts, pollen, or simply aesthetic value, should be sited to reflect their needs and therefore reflect the landform pattern. Too often, however, smaller scale diversity does not conform to the landform pattern, and amenity planting is a random matrix which reflects nothing of the character of the land or the forest.

At lower altitudes the character of the landform is not as strongly defined as at higher altitudes, and this gives the forest manager greater freedom for creative expression.

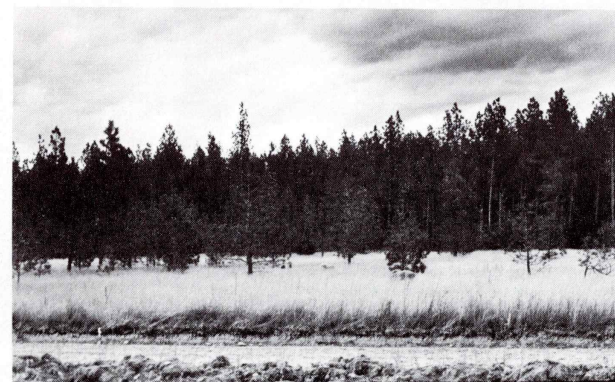
Another major transition is between indigenous and exotic forest. If the indigenous forest edge has been undisturbed there will be a natural transition through scrub or tussock. This should be preserved by planting to a natural edge and having open space between the two forest types. Where firebreaks are needed they should conform to the landform pattern. If they pass through scrub there should be minimal removal of topsoil to ensure indigenous regeneration after burning.



bold patterns of  
exotics fade  
naturally into the  
background



left, natural con-  
straints evolve  
natural patterns  
right, mixed  
species transition



right, stocking  
variation transi-  
tion



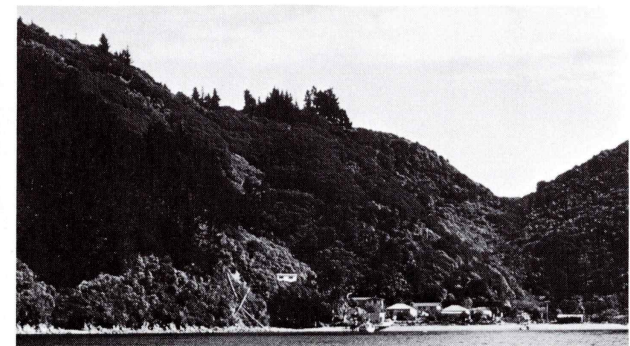
### 3 Integration—transitions

The final major transition is between forest and water—river, lake or sea. These transitions are biologically rich and highly sensitive ecologically. The long term implications of any alteration must be carefully considered. Establishment may cause very little disturbance, but logging may cause major disruptions. Where an established relationship between vegetation and water exists this should be preserved. Water always attracts people and access to it should not be denied by development.

Many minor transitions are seen close up, or in small scale, inside the forest. The same principles apply here as above. The quality of stand edges can be improved in many ways. Small scale design and integration is further discussed in Section 4.



diversity and  
naturalness on  
land—water  
transition



right, natural  
vegetation  
preserved on  
transition  
left, an un-  
natural boundary



### 3 Integration—principles

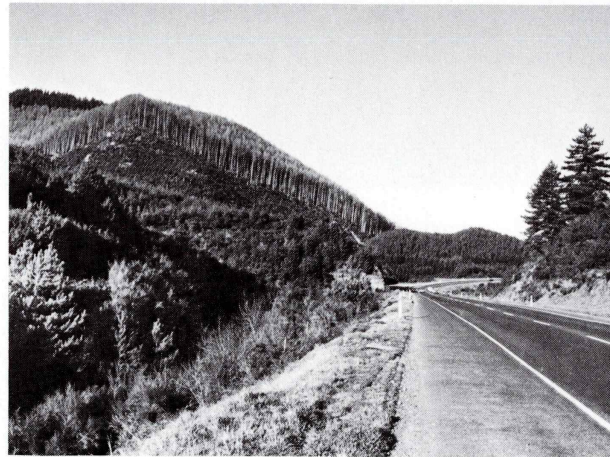
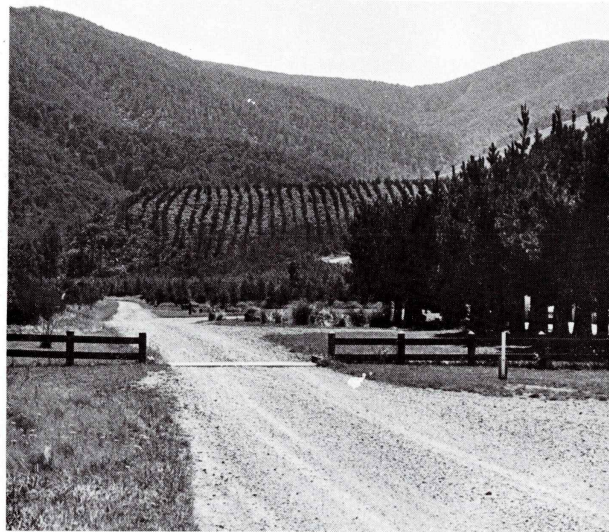
**Remember it is a forest you are dealing with, everything should be bold and simple.**

**Always use large scale trees as a framework.**

**Where species other than the main production species are used, plant in bold patterns, in large numbers, and according to naturally occurring landform patterns.**

**The easiest way to introduce diversity on a forest edge is to allow natural regrowth. This always confers unity as well as introducing diversity.**

**Think about the long term implications of management and logging.**



lines in conflict

left, poorly located boundaries create conflict —visual and for management











# People and Forests

4



#### 4 People and Forests

In Section 2 it was established that people see forests from different viewpoints. The person looking at the forest from without is passive and detached. Inside a forest the viewpoint changes. People are more aware of the small scale details of the forest and what it offers to satisfy their physical and recreational needs.

In Section 3 a framework was identified which embraced the essential values and so defined the unique character of the landscape. Because of their diversity, the areas within the framework will usually hold the greatest human interest. In other words the most sensitive and critical ecological areas are best able to meet a wide range of human needs. As a framework is established in the broad scale planning stage, the planner defines the areas most suited to meet human needs beyond the simple need for wood.

Careful planning will be required for the more accessible areas, particularly on the forest edge, which will suffer heavy use from settlement or recreation. Values must be protected and intense physical impacts must be accommodated. The aim is to minimise impact and alteration.

This section discusses more detailed planning and development within the forest so people can use and enjoy it—small scale development and design. This kind of development covers a wide range of situations—some with high inherent values needing protection, others where values may have to be created. Usually though, there will be natural features to which development can be related.



Hanmer—intensive use areas integrated into forest structure



## 4 Planning

The same principles apply to small scale design as to large scale landscape planning. Ecological values remain paramount, but additional considerations are called for because of the greater intensity of the relationship between people and the environment. People see the environment in detail and react to its ability to satisfy the human need for shelter and security. Stark, harsh environments may have “a beauty all their own”, but such claims are usually made by those who do not have to live in them.

**The planner must consider the needs of the land and the needs of the people who will use it, simultaneously.**

Too often:

- the engineer selects and views a site purely from an engineering viewpoint;
- the architect sees buildings in terms of regulations and structural constraints;
- it is assumed the spaces between roads and buildings will take care of themselves;
- the recreation developer sees facilities as the “experience” rather than as aids which make the experience possible;
- the developer’s aim is for people to enjoy the forest environment, but he creates an alien oasis within it to accommodate them.

Development should link the needs of both man and the environment; it brings them together, but should protect the integrity of each.



forest character  
retained but  
human needs  
accommodated





#### 4 Planning—site interpretation

The first step in developing any site, large or small, is to identify existing values so that development does not destroy the attributes that initially made it attractive.

Too often we say, “This is a nice area, let’s develop it”, and in doing so we ruin what attracted us in the first place.

Streams, lake edges, vegetation patterns, natural features, and views all have values that can form the basis of a development plan. Once the values of the site are fully understood the framework emerges—areas to be protected, areas unsuited to the intended site use; areas which should be left open as sight lines or linkages, and the areas potentially available for alteration.

Remember change is always occurring—rivers rise and fall, trees grow taller and dominate what preceded them, strong cold winds blow, and the sun does not follow the same path two days in a row. **There is an existing natural order and continuous landscape process to which development must respond, to be successful.**





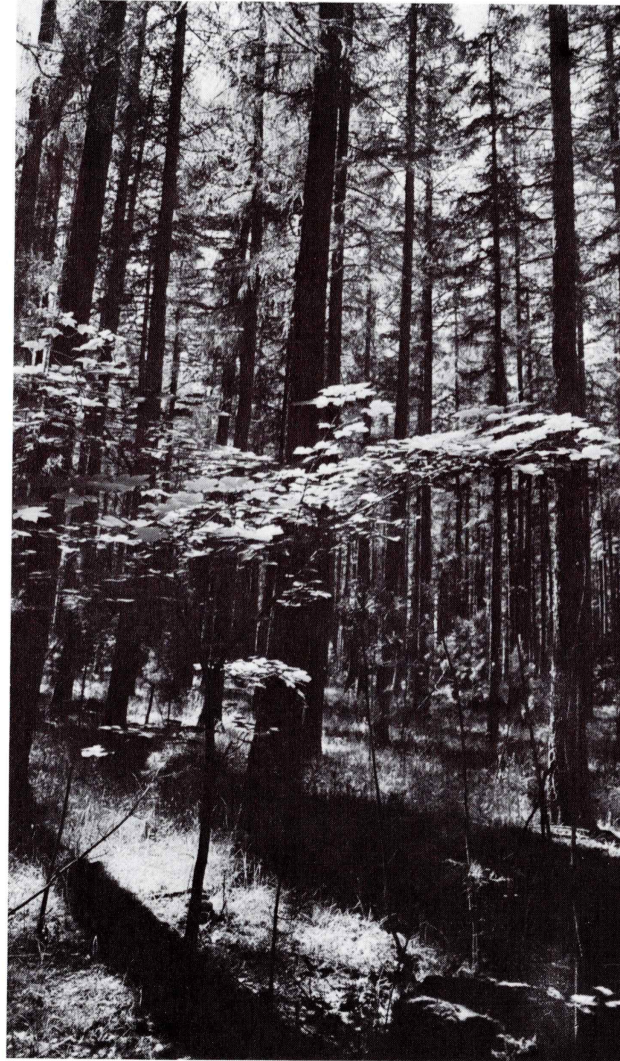
#### 4 Planning—aims of development

Development should never be undertaken for its own sake. Too often, with the best intentions, facilities that are not really necessary are provided. The motive in providing them is to be seen to be doing something for the public. Development can be a response to our own needs and our wish to be accepted.

**Developments and facilities have little to do with the relationship between the forest manager and the public. Their purpose is to facilitate a relationship between the public and the forest.**

The planners must ask: “Who will use this site and what will they expect from it?”

At a forest headquarters people live and work to service the forest and the public. These diverse activities create a wide range of human needs which must be taken into account in the site's development, but they can be easily identified by asking the people themselves. The views and needs of potential recreational users of a forest site are less easy to establish. The planner must resort to past experience, survey information, and above all, imagination. If the forest has a wide range of recreational opportunities, then there will be a wide variety of expectations from users. Some people need maximum security and will appreciate plenty of facilities on the forest edge. Others need no more than a map as a guide to untracked areas.



beauty in  
simplicity



#### 4 Planning—aims of development

As a general rule the developer should aim at simplicity and quality:

- simplicity will intrude least on the environment, and quality is a response to the site's inherent values.
- simplicity minimises maintenance and leaves a freedom for the site to evolve with the natural environment.
- simplicity leaves flexibility for alteration if use patterns change.

The forest environment is large scale, bold, simple, and natural. Complexity contradicts this and tends towards inflexibility. The urban park is a constant fight to keep nature under control—mowing, weeding, pruning, cutting, replacing. In the forest, nature is afforded freedom, and design should work with this rather than contradict it.



left, robust structure in a natural setting  
right, integrated and appropriate

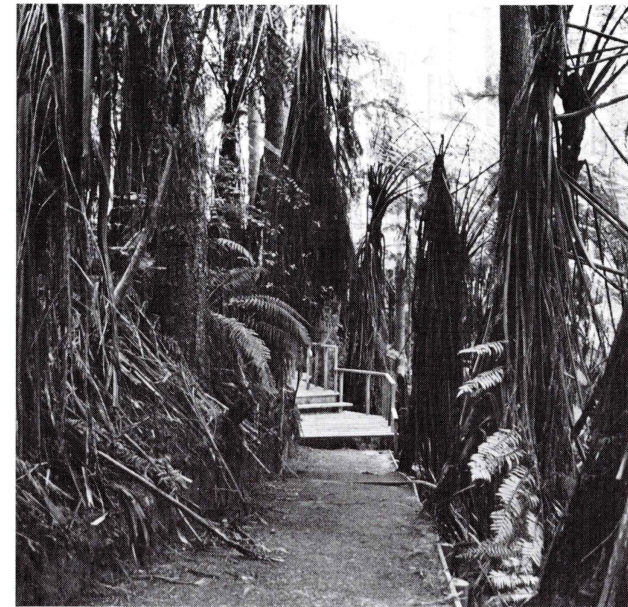
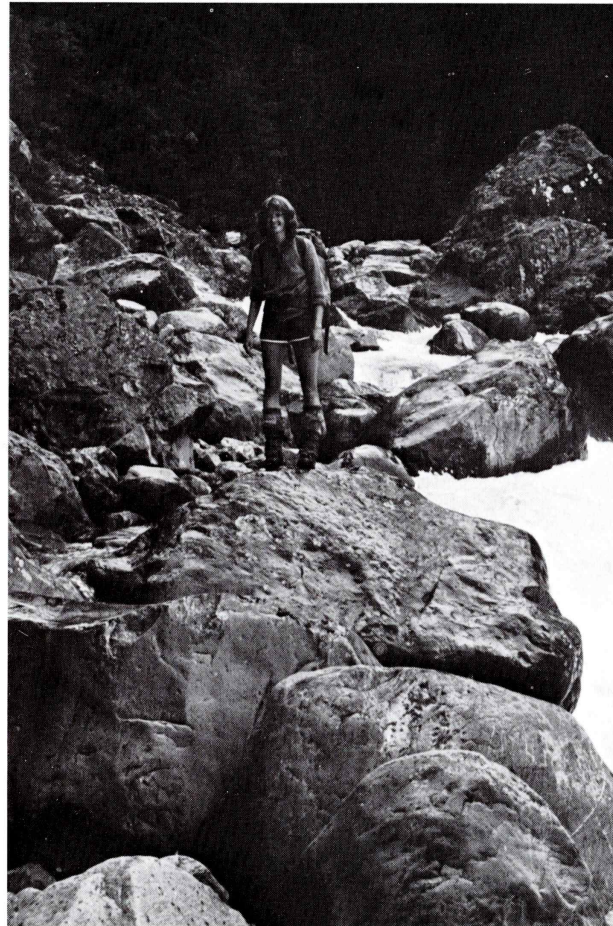


#### 4 Planning—recreation

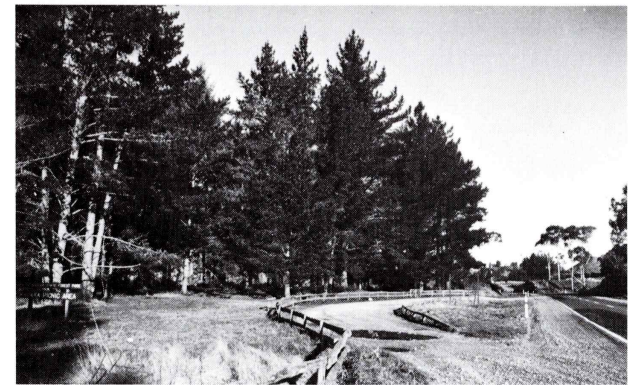
Recreation offers an escape from day to day routine. Forests provide freedom from the constraints of technology and its associations. Nature stimulates the senses—there is space—the clock stops.

The person who lives and works in the forest finds the civilised comforts of the forest village a pleasurable relief. But to those who periodically escape to the forest from the urban environment any overt signs of civilisation are abhorrent.

Exotic forest development must be efficient and therefore demands a certain order. This is what people seek to escape. In some areas, however, attempts to create order will be abandoned either through ecological or economic necessity, or for reasons of common sense. Abandoned areas will be left for nature to take its course, and these fulfil a human need. In them a person is free to experience and respond without directives, influences, or controls. A balance of order and abandonment is essential to existence, and the appropriate balance will vary from one person to another and throughout the environment. Some people need a lot of order to provide security, others want none of it.



left, freedom and isolation  
right, freedom with security



right, security



#### 4 Planning—recreation

The large scale development process (see Section 3) identifies areas of recreation potential, and where appropriate, open space will have been retained.

**Although greatest diversity and interest tends to be within the forest framework, the whole forest has recreation potential. Roads, tracks, signs, structures, and brochures simply ensure safe access to, and use of the resource. All these should be designed in a way that respects naturalness.**

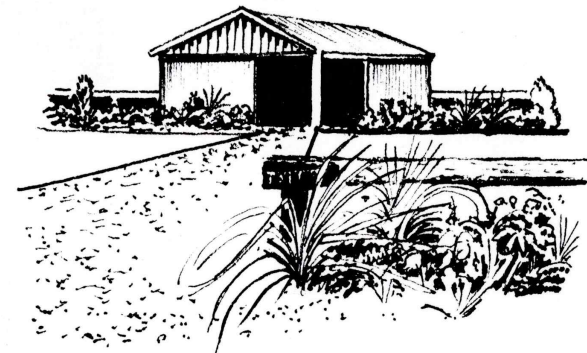
Development should minimise the need for maintenance by working with or evolving natural systems which take care of themselves.

Development should be a simple response to simple needs. For example, picnic or camping areas need to be on predominantly open ground with suitable sun, shade, and shelter. Some divisions of space may be needed to create private areas, and toilets need to be accessible but unobtrusive.



left, structures are absorbed by trees

right, a simple response to simple needs



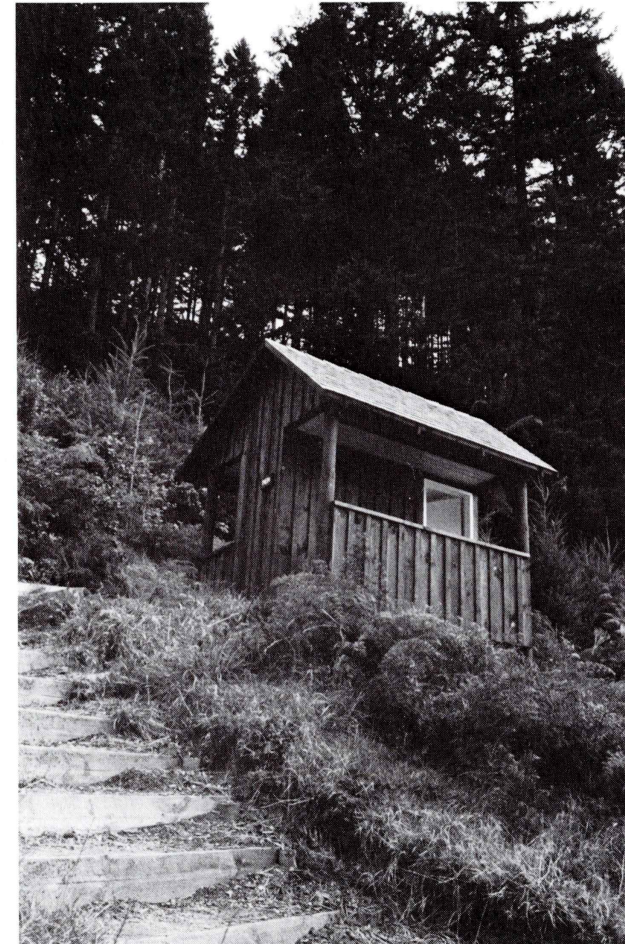
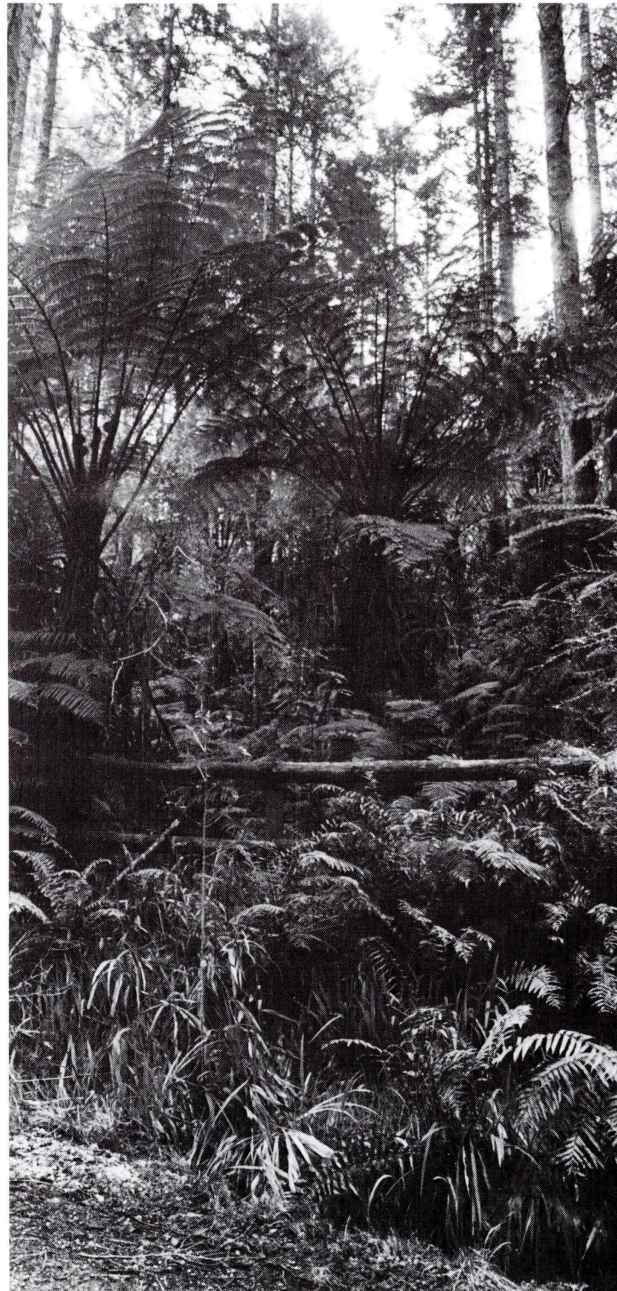
without trees



#### 4 Planning—recreation

Vegetation rather than structures should be used wherever possible to divide and mark special areas. Planting should be a direct extension of the forest species so the area is an integral part of the forest environment. This does not exclude the use of other species for defined purposes such as shade, but the unity and character of the forest should be retained.

**All development should be built into the forest environment rather than stand apart from it.**





#### 4 Planning—access

The most unobtrusive form of access is a walking track. This may seem such a simple development as to be unworthy of mention, but it is quite the opposite. **A walking track can bring people and the environment together in an intimacy which is normally denied by the intrusion of the thoughts, objects and sounds of man's created world.**

Even though physical capabilities vary widely, tracks can be designed to suit different user groups. The expectations of all those who use tracks will be essentially the same. Very few people now walk in the forest of necessity or to simply arrive at a destination, though the latter may be part of the motive. People walk for the sake of walking, to experience an environment where they feel free and peaceful, and their senses are stimulated.

In a completely passive state the body relaxes, the scene is static, and the viewer is inclined to "drift off". In a very active state a person becomes engrossed in the action, and often in Self preservation, so that awareness of the environment ceases. A fast driver sees little; so too the bush bashing track cutter!

Walking provides sufficient physical activity to keep the walker alert but is not usually so demanding as to become the sole preoccupation. The rhythm is soothing and the scene is constantly changing. There can be an acute awareness of the environment.



tracks bring  
people and the  
environment in  
close contact

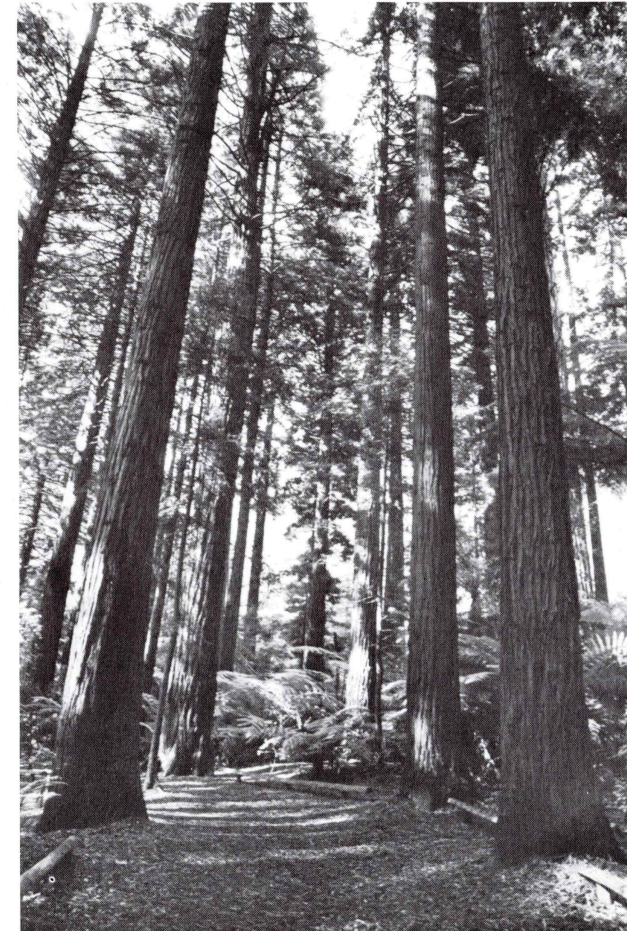
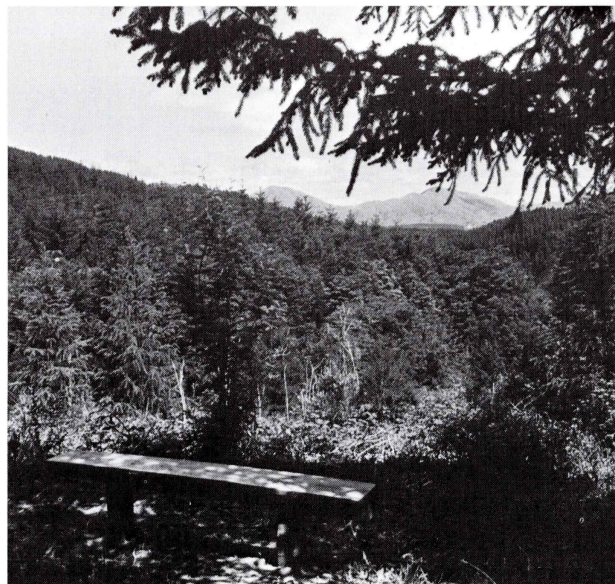


#### 4 Planning—access

The quality of workmanship now being achieved in forest tracking is frequently high and care is being taken to disturb the environment as little as possible.\* Track alignments and grades however are often more a reflection of the physical capabilities of those who establish them, than of those who will eventually use them. Rather than the route offering the most satisfying experience, the shortest and toughest link between two points is established. The walker's attention centres on his physical exertion and the experience becomes one of either regretting ever having left or desperately longing to arrive. He concentrates on the beginning or the end and never really experiences the route. The environment becomes an unrelated series of huts and resting spots.

**A track is an exploration of the forest. The developer must become thoroughly aware of an area and its value before any course is set.** The track should explore the form of the land and draw attention to its features—quiet pools, unusual rock outcrops, its ecological diversity—discover its essential character. A track can explore an area's geological or cultural history by incorporating such things as old gold workings and structures. Where old and abandoned tracks exist these can be reopened to bring back the past, and provide an opportunity for people to experience something of how it might have been.

Roads should be established with the same awareness as for tracks, although engineering and operational constraints may dictate a compromise. The road can very easily become the experience. Wide formations and extensive road edge clearance can shift the forest edge back and open up the sky so the driver is no longer a part of a forest. Where required parking bays should be formed at the same time as the road.



left, clean simple design—visual interest in repetition of the tree form (Lands and Survey)  
right, intensive use but unobtrusive barriers

left, views—orientation and interest

\*excellent guidelines are provided in "Walkway Construction and Maintenance" (Lands and Survey 1979)



#### 4 Planning—car parking

The only future certainty about private vehicle transport is that it will be increasingly more expensive. However our desire for mobility is deep seated and it appears we are willing to go on paying for this privilege. Therefore we will need car parking facilities in our forests for many years to come.

The design of the forest entrance and car park should prepare the visitor for the forest experience. The layout should be easily followed by the driver but remain in context with the surrounding forest.

**Adequate sign posting before the entrance is essential. A right angle access way is best for visibility and for forcing a reduction in speed, particularly on exit.**



small spaces  
—tall trees



big spaces  
—no trees



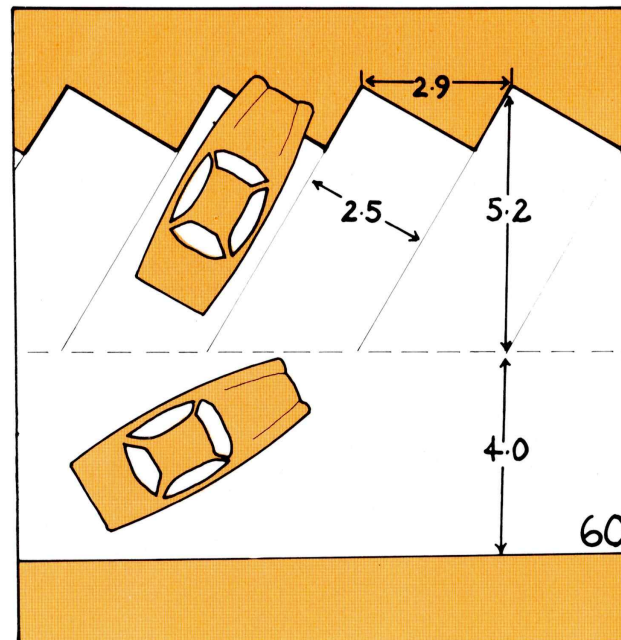
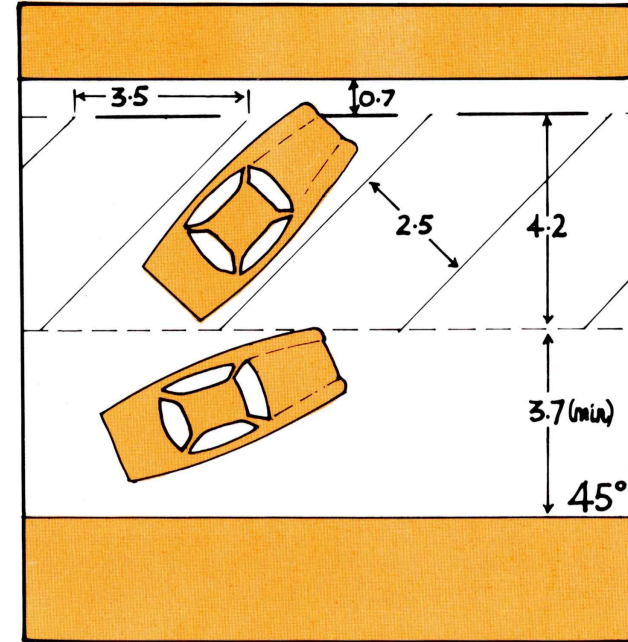
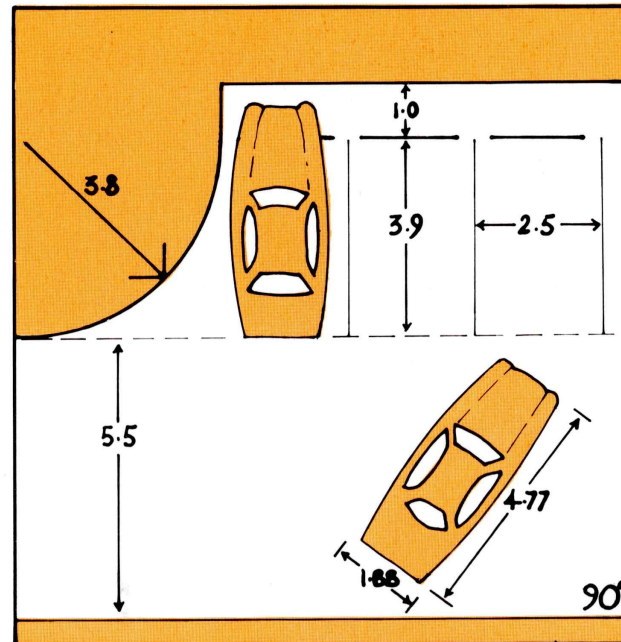
#### 4 Planning—car parking

**Parking dimensions:** The “90 percentile design car” is an imaginary car which is longer and less manoeuvrable than 90% of cars in New Zealand. The “design car” compares in size with a Holden (1974 model) and with the trend toward smaller, more manoeuvrable cars the dimensions illustrated will ensure adequate room for door opening and ease of movement in a parking area.

**Well designed car parks provide ample room for entry and exit, adequate turning radii, simple grades, efficient circulation, convenient location and pleasant appearance.**

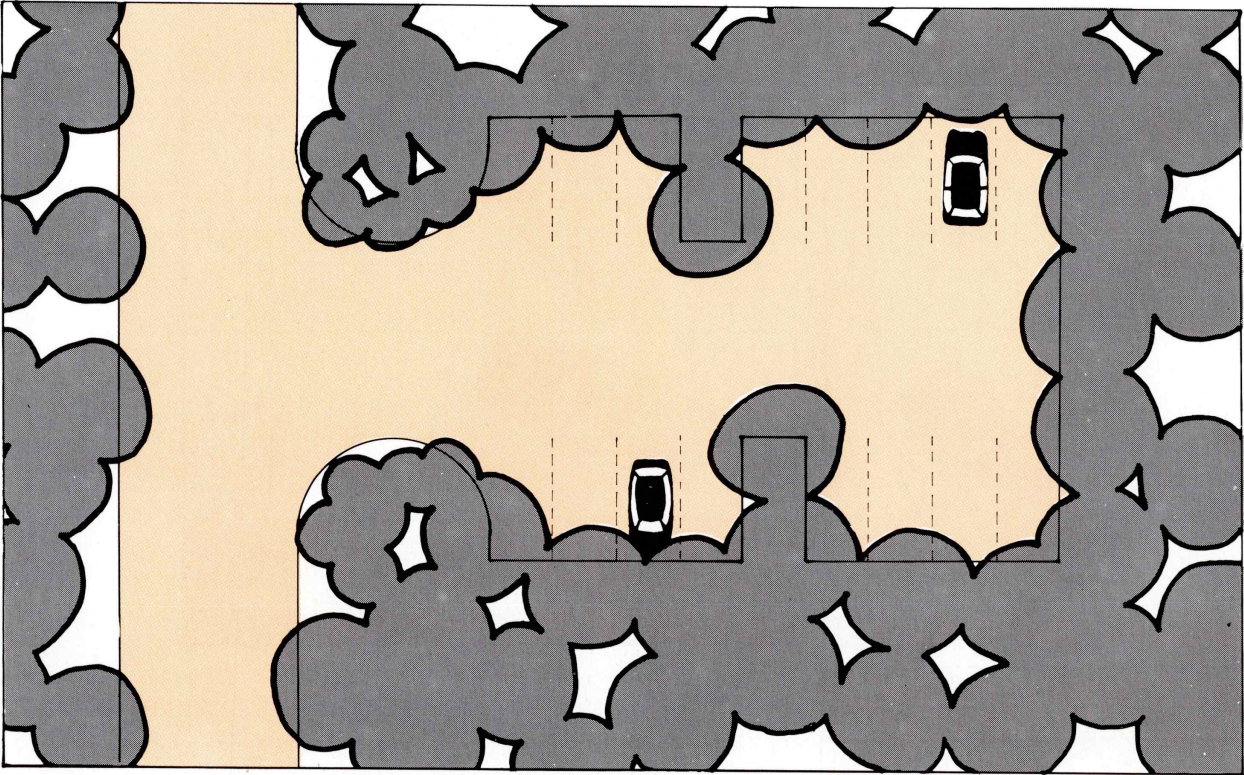
Small parking bays among forest scale trees will not visually dominate the site and extend the forest into the arrival points. As a general principle parking bays should be on straights to aid visibility when backing out. Space is not a constraint as in urban situations, and bold intensive planting between parking areas is often possible.

Aim for simplicity. Present the visitor with a minimum number of decisions. Informal parking places should also be screened by trees to provide shade, subdivide space, and ensure the area merges into the surrounding forest.

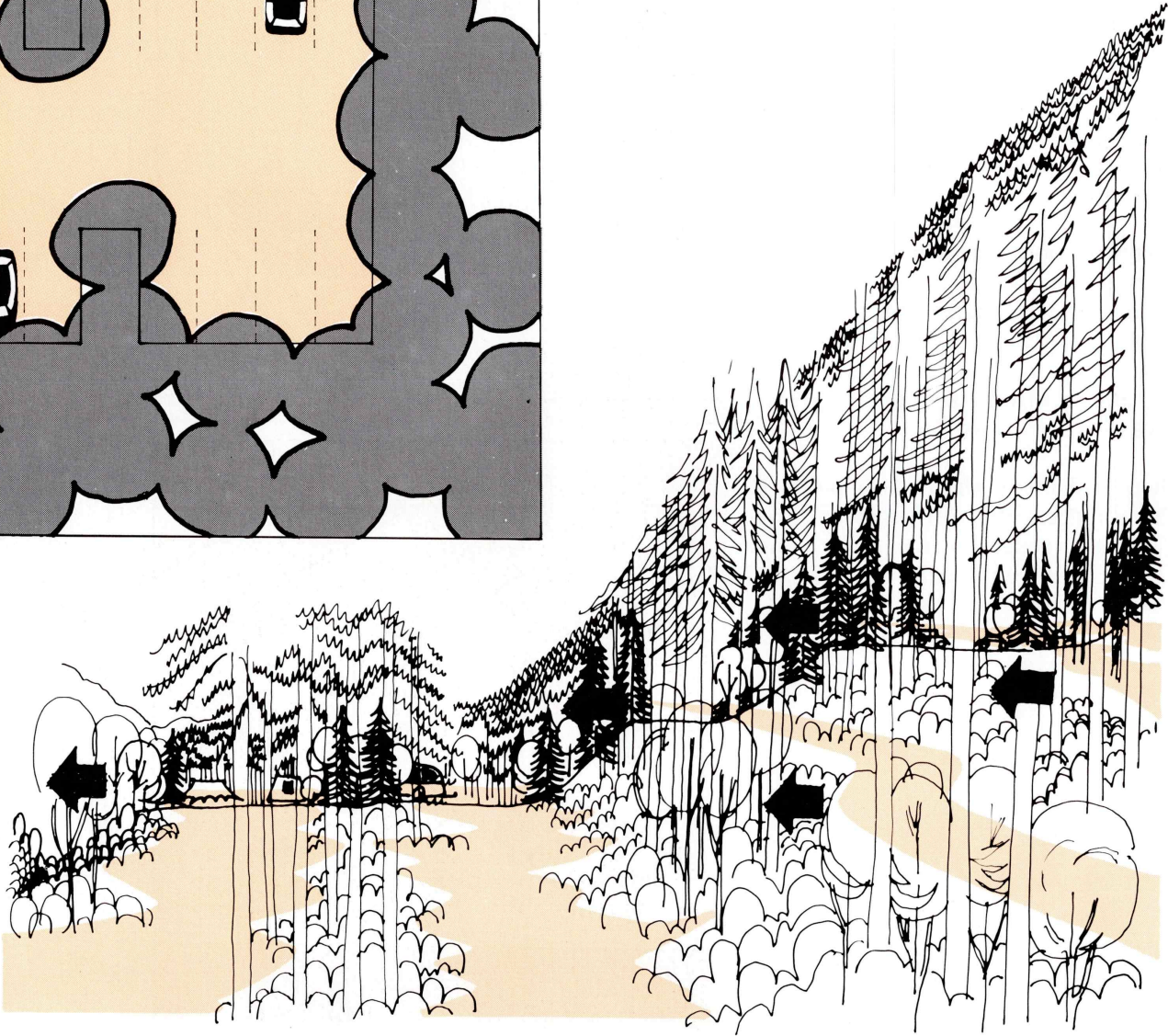




4 Planning—car parking



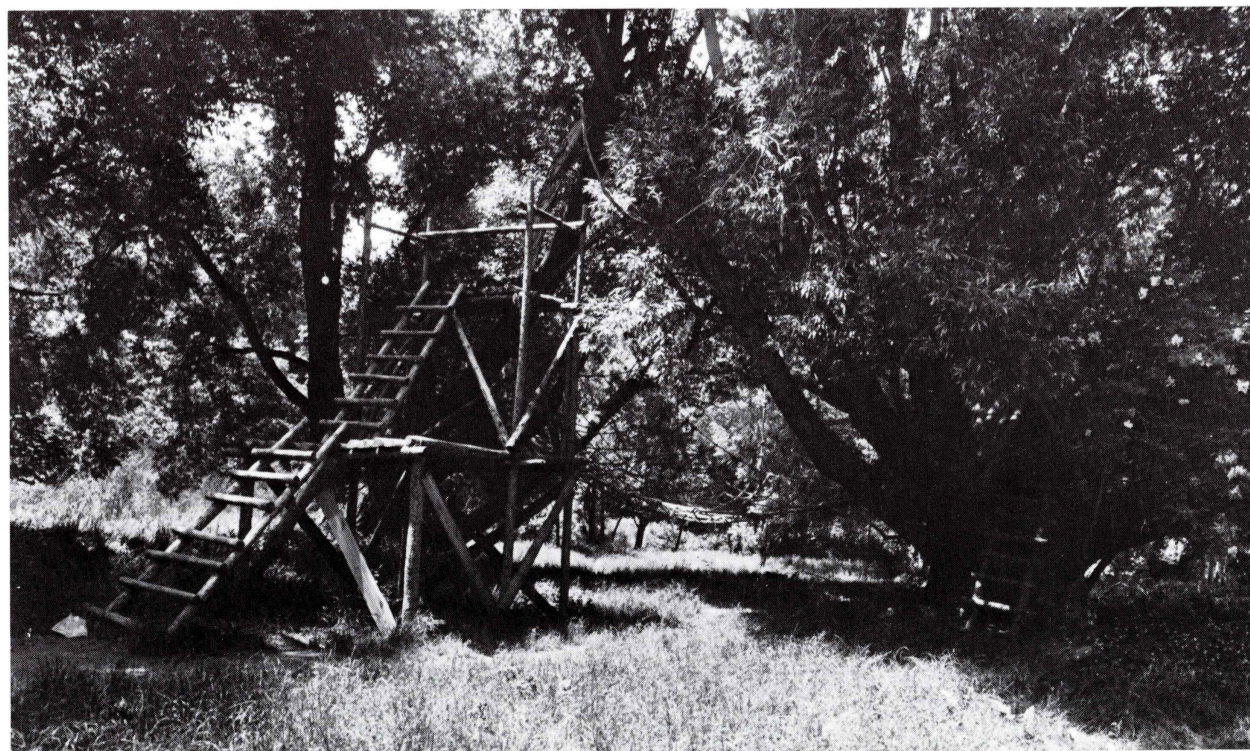
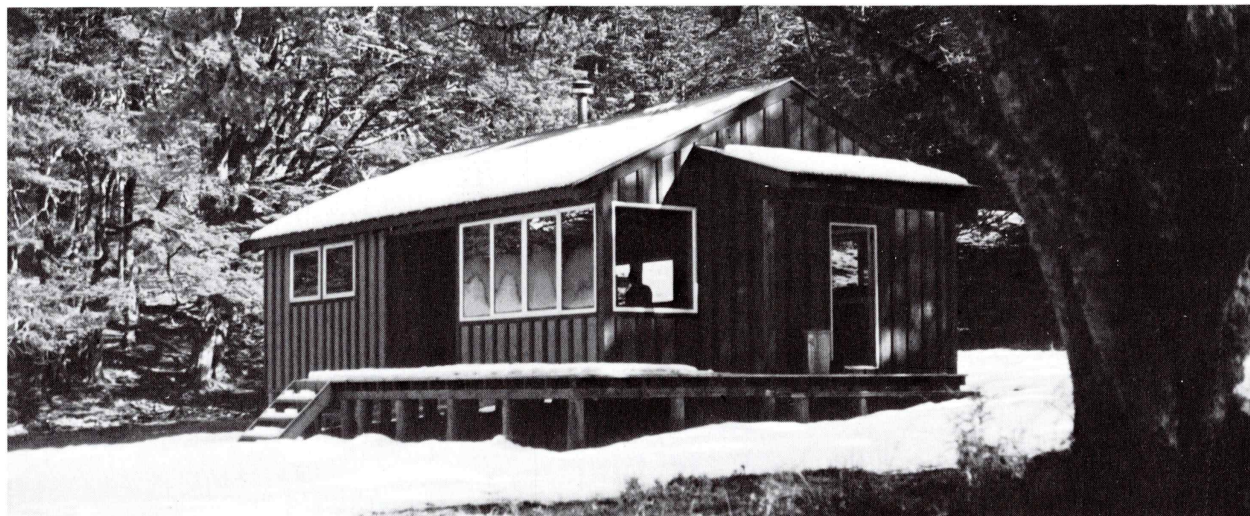
trees screen car-parks and provide natural barriers





#### 4 Planning—structures

All structures in a forest have a purpose or function which must be clearly understood. Having defined the function there will be many ways in which it can be fulfilled. For example, places to sit can be provided in a variety of ways. Final designs should harmonise with the surrounding landscape, both natural and man made, and every structure should be adapted to the particular site, rather than a repetition of what has succeeded elsewhere. Prerequisites to good design are an ability to interpret the needs of people, and a sense of the particular features of the environment to which the structure must relate.





#### 4 Planning—structures

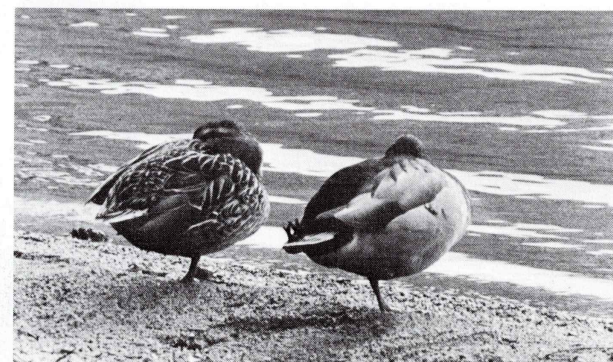
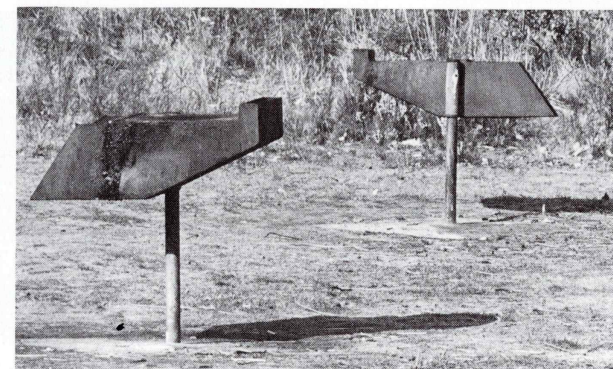
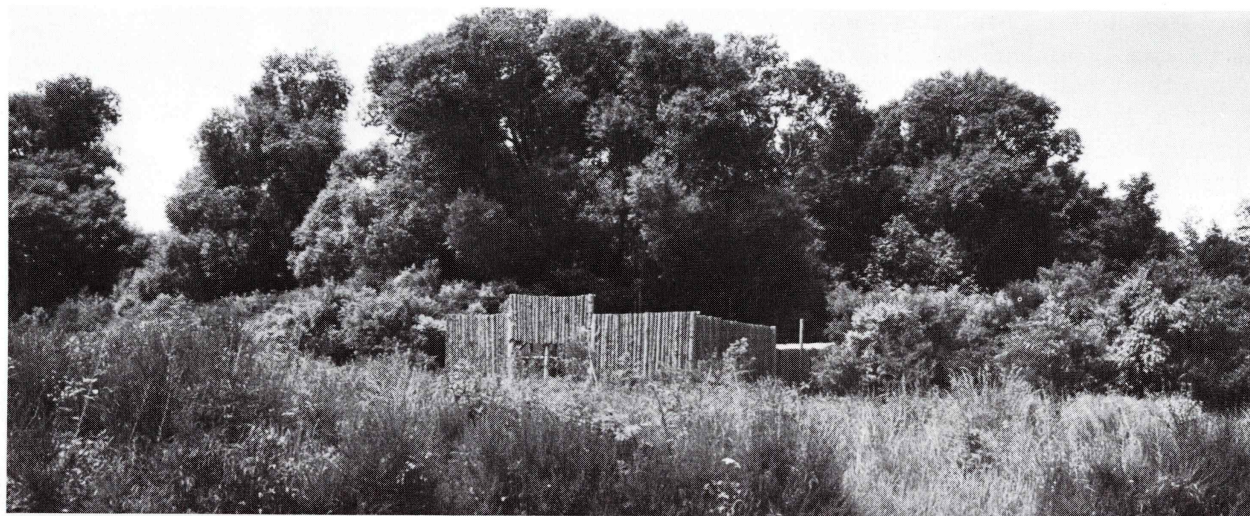
**Simplicity:** The structure should fulfil its intended function as simply as possible. Elaborate designs are incongruous in a forest environment which is bold and basic. Modern wood working machinery can contrive rusticity, but it always looks contrived. Stick to basic tools and techniques.

**Durability:** All structures are expensive and time consuming to design and to build. They will inevitably become weathered and worn. Some structures age with grace and evolve a charm; others become tatty. Build to last in a robust style using natural stone and durable timbers.

**Scale:** The scale of the forest is bold. The cues to pick up are usually in the surrounding forest, the scale of tree trunks and crowns. The dimensions of materials used should relate to this scale. Different structures can be related one to another by the use of similar materials and dimensions.

**Naturalness:** Natural materials, wood and local stone, never look wrong in a forest setting. For minimum maintenance the natural character of wood should be preserved; painting is seldom necessary.

**Colour:** Inevitably there will be some surface to which paint is applied. The use of colour is discussed in Section 5.

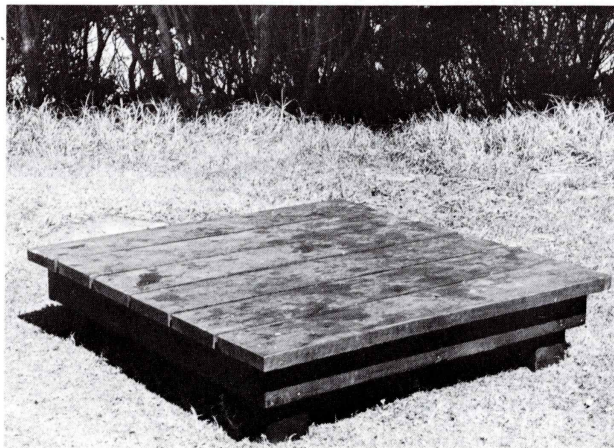
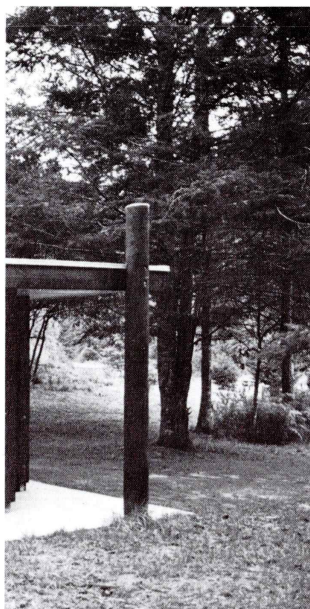
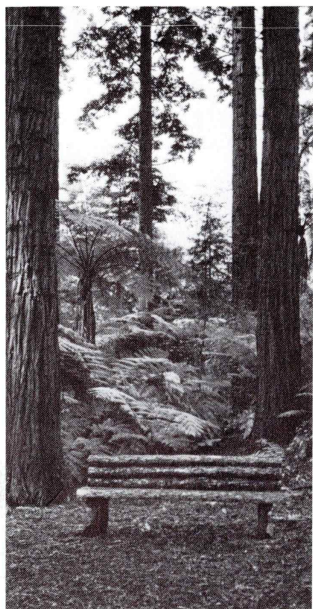


left, quality design in natural materials (Lands and Survey)

right, structures reiterate natural elements



#### 4 Planning—structures



right, peoples  
needs are simple

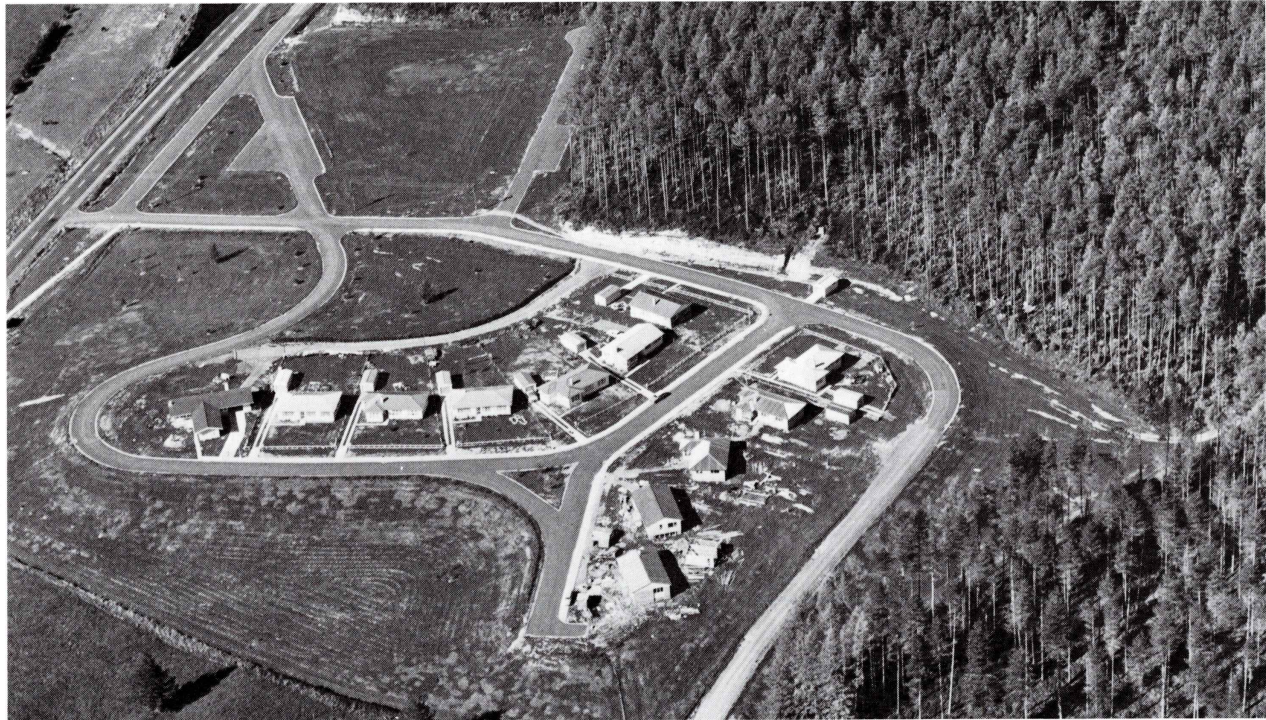


#### 4 Intensive Use Areas

Areas of intensive human use are increasing as more people, both individuals and groups, come to forests not simply to walk and look but to spend longer periods congregated in one place.

The most intensively used area is a forest headquarters where a range of often conflicting human needs must be accommodated. We have used a simple series of models of a forest headquarters to illustrate the main factors which must be considered in designing a satisfactory layout for an intensive use area. The same principles apply in all intensive use areas but the forest headquarters will be most familiar to forest managers.

The series begins with a traditional layout. This has been altered and modified progressively to show alternatives and possibilities. **The aim is not to demonstrate solutions but to draw attention to some of the questions which need to be asked and answered to achieve satisfactory results.**



photograph  
1971



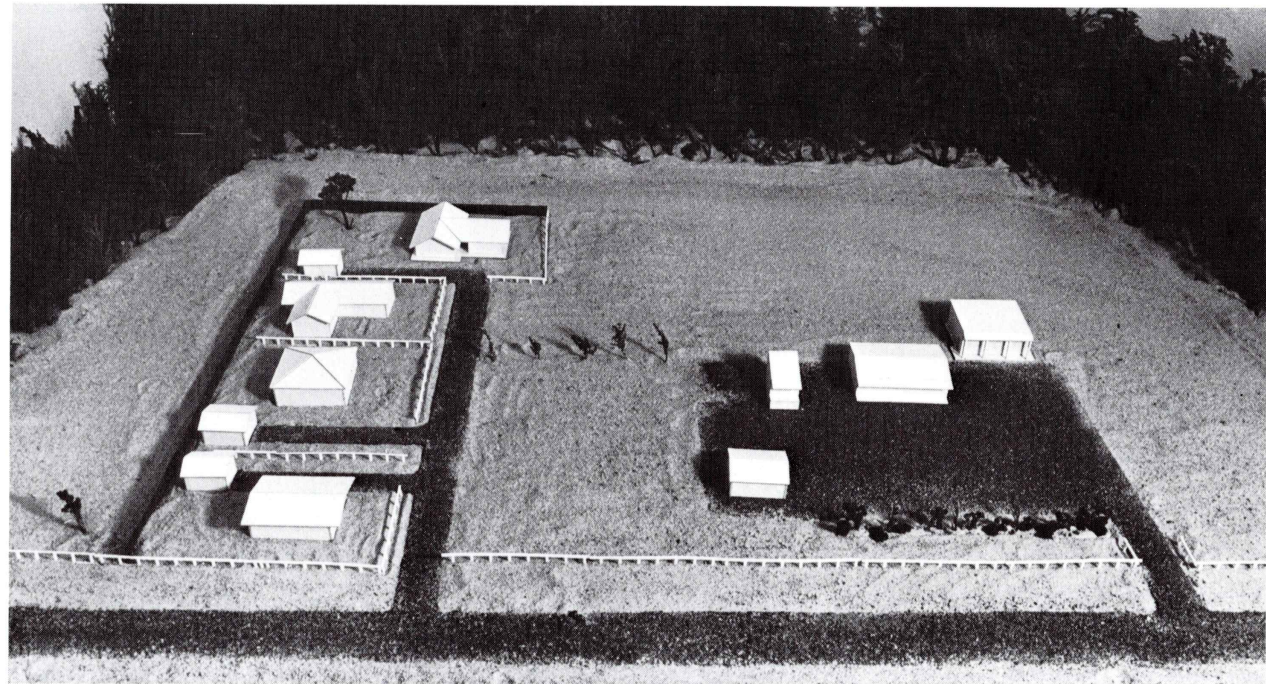
photograph  
1940s  
(National  
Publicity  
Studios)



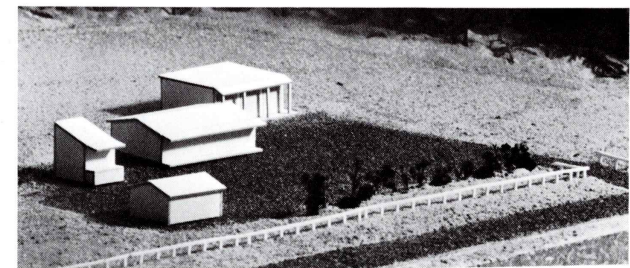
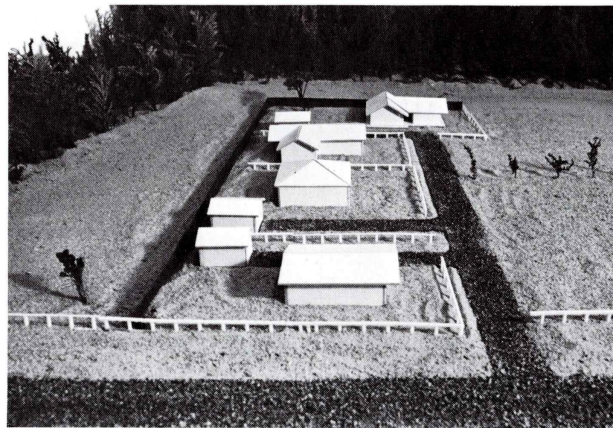
#### 4 Intensive Use Areas

The major shortcoming in many developments is that they do not relate to the surrounding environment and their style is inappropriate to that environment. The rural environment is essentially natural and free rather than constrained, and urban patterns contradict this. Often housing developments are imposed like an urban subdivision, as if the surrounding landscape did not exist. Natural undulations are flattened where they could be used to create interest and give shelter and privacy. Vegetation is cleared when it could be a link with the surrounding landscape and shelter for new planting. Buildings are located in rigid patterns which confine space and minimise privacy. Often the available area is quite large and much of it is left as wasteland. The aim to minimise the cost of services by minimising their length is thwarted by expensive and often unnecessary curbing, channelling, and footpaths. One borough in New Zealand spent considerable money putting in a kerb and channel system with piped drainage where the rainfall was rarely more than 350 mm per annum and the town located on deep gravels.

Roads should be designed for each site rather than a standard pattern applied to every development. The treatment of spaces between buildings is often inappropriate, expensive, and requires constant maintenance. Isolated shrubs and trees have little impact and are out of scale with buildings and the forest backdrop. Often they are isolated specimens alien to the greater environment with no relationship to other features of the site. They do not shade, shelter, provide links or privacy. The colours used on structures fail to relate them to the surrounding environment or to one another.



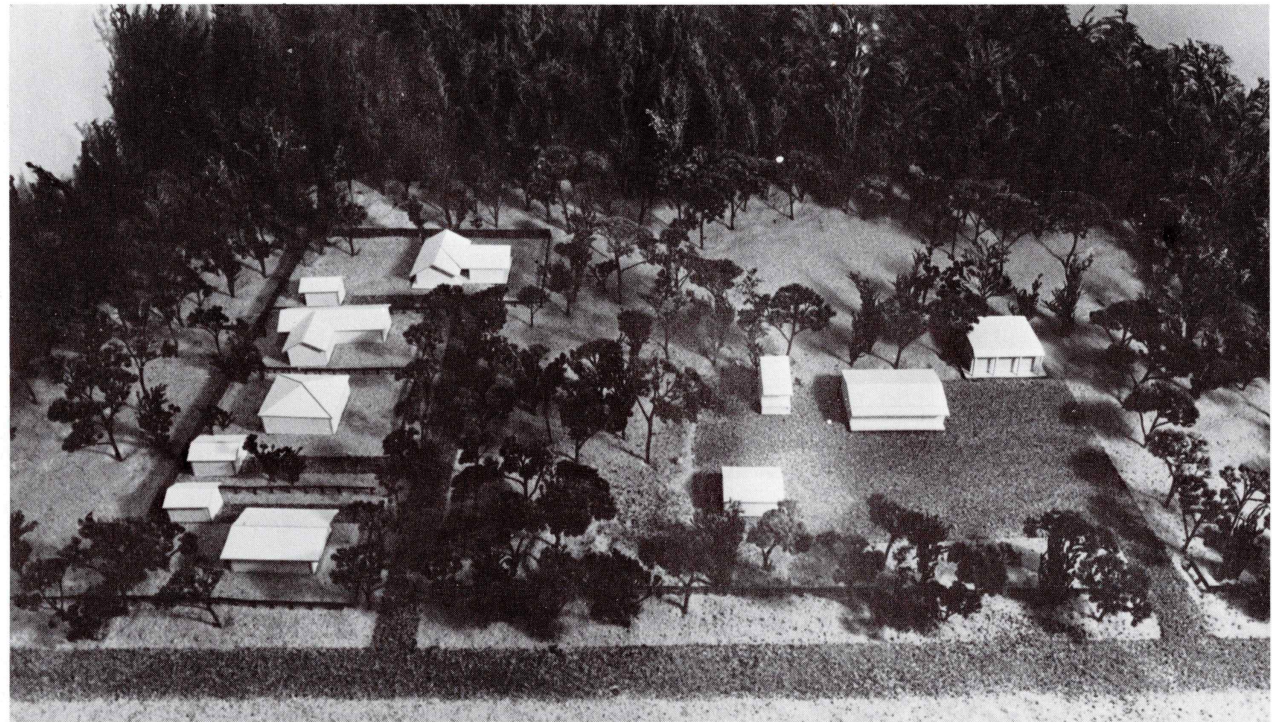
—geometric  
—urban



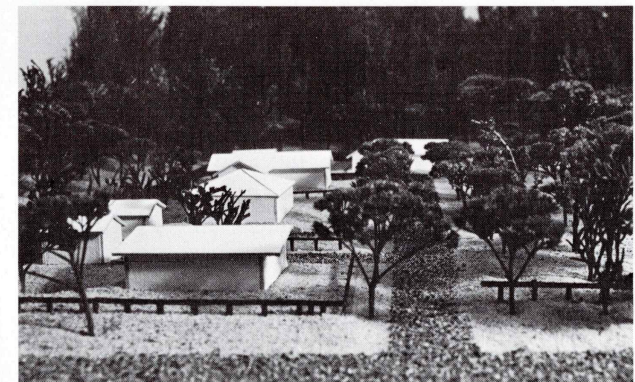
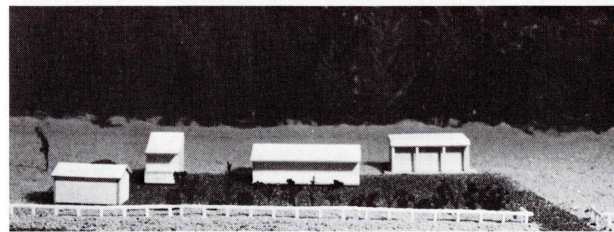


#### 4 Intensive Use Areas

Without reorganising the basic layout it is possible to create a more integrated development with planting. Large scale trees from the forest or the surrounding landscape can be used to bring the surrounds into the complex and provide a framework. These can be planted to create natural divisions and spaces. Using a few dominant species provides continuity and other species can be planted for variety and interest. Once a bold framework is established, individuals “do their own thing” within areas for which they are specifically responsible—create diversity within overall unity. The scale of the large buildings can be better absorbed in a matrix of tall trees. The site begins to express a forest character and becomes part of “what it is all about”.



trees separate  
activity areas,  
define spaces,  
absorb structures





#### 4 Intensive Use Areas

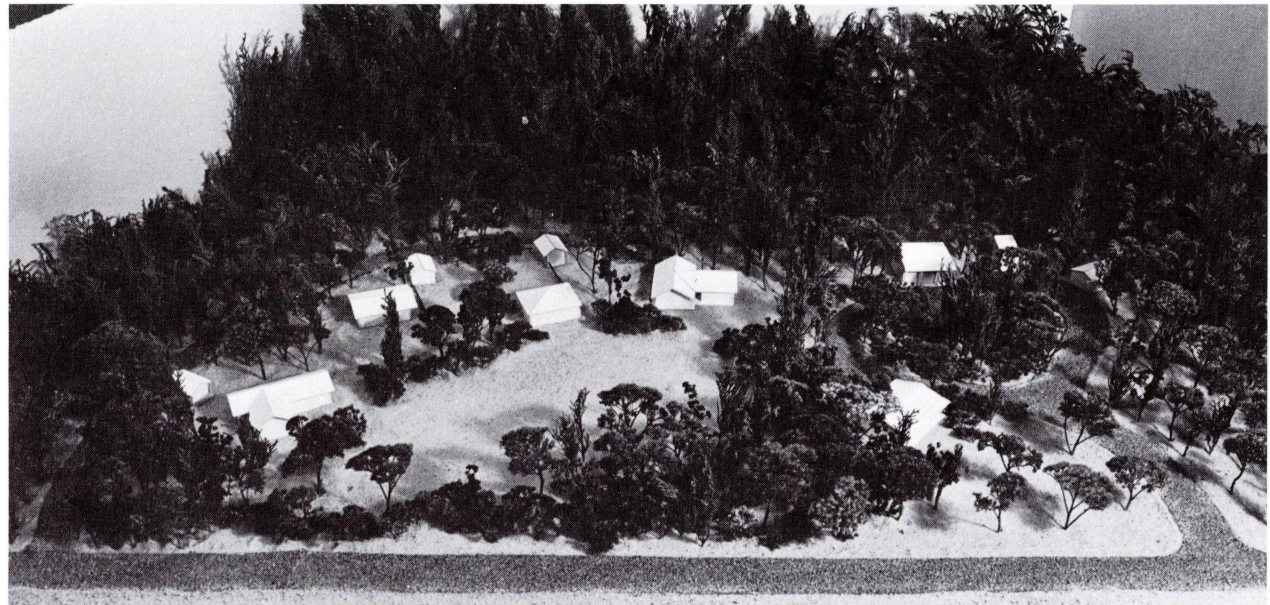
By reorganising the building layout the whole site can be used. It is necessary to consider the relationships between the various functions for which the site is to provide. Whether the planner goes through a series of tabulated analyses or simply sits down and thinks through the process is unimportant, but for complex development it may become essential to work on paper. The aim is to decide who needs what.

There are always distinct functional areas. People need peace, shelter, privacy, and places to play. Houses can be easily accessible to the forest for recreation, and need to be well away from main roads and busy vehicle accessways. It may often be desirable to have no through access at all.

The administration area should be central and accessible to both staff and public but may also need peace. For example, it could be most unsatisfactory to have it next to a busy workshop.

The workshop may need to be distinctly separate. Some activities are dangerous and noisy, and junk is unavoidable. Workshop doors are often open so there needs to be sun and shelter. People work outside, on signs or prefabricating buildings, so space should be provided—again with sun and shelter.

Carparks should be easily accessible, preferably small or broken up with planting, and screened so that they are visually unobtrusive.



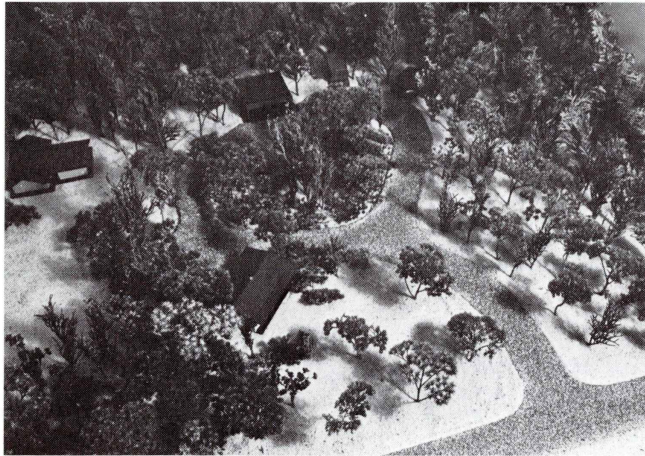
— building with  
forest structure



left, the operational area  
right, from the entrance



#### 4 Intensive Use Areas



right, buildings reflecting a lot of light are conspicuous



darker colours reflect less light—relate buildings to one another and the background

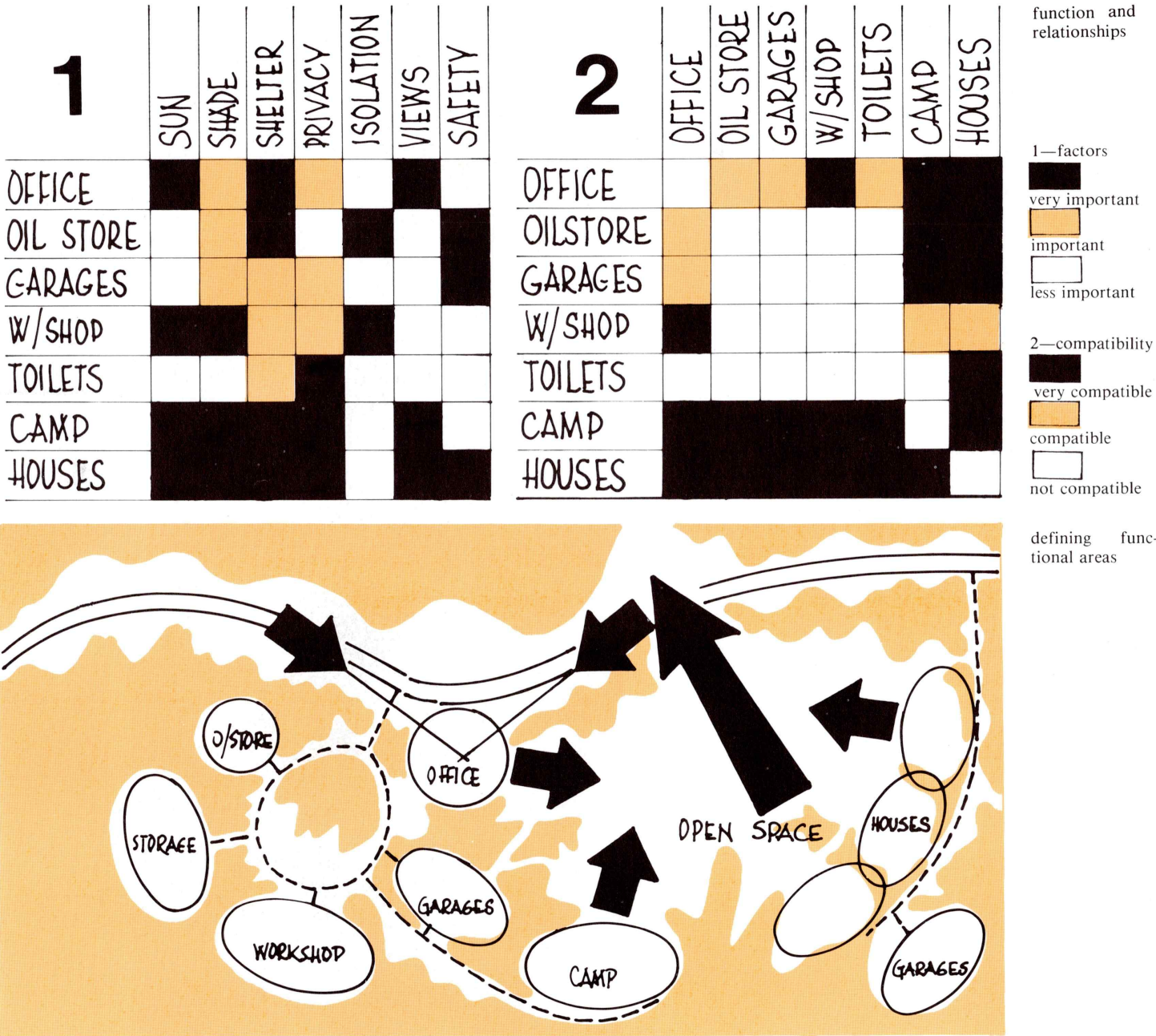


#### 4 Intensive Use Areas

It is essential to clearly define the functions in relation to the people who are going to carry them out, and to each other, before any detailed planning begins.

The defined functions and relationships must then be integrated into the site. A plan is essential. It should clearly show all site features. If the site has been carefully inspected and analysed the planner will be aware of natural systems and features, soils, drainage, growth potentials, climatic influences, and will have thought about potentials such as views and shelter. The use areas can then be located according to the character and potentials of the site. At first this may be simply by doing rough sketches and diagrams of a general layout.

This will require close co-operation between specialists—engineers, architects, and others who have technical or operational expertise. The final detailed design must evolve out of consideration of all the factors. This process may seem, and often is, a lengthy one, but as there will be many years of living and working on the site it is vital. Inadequate understanding of the site can prove expensive in the long term, either in cost, or the creation of an unsatisfactory living and working environment.

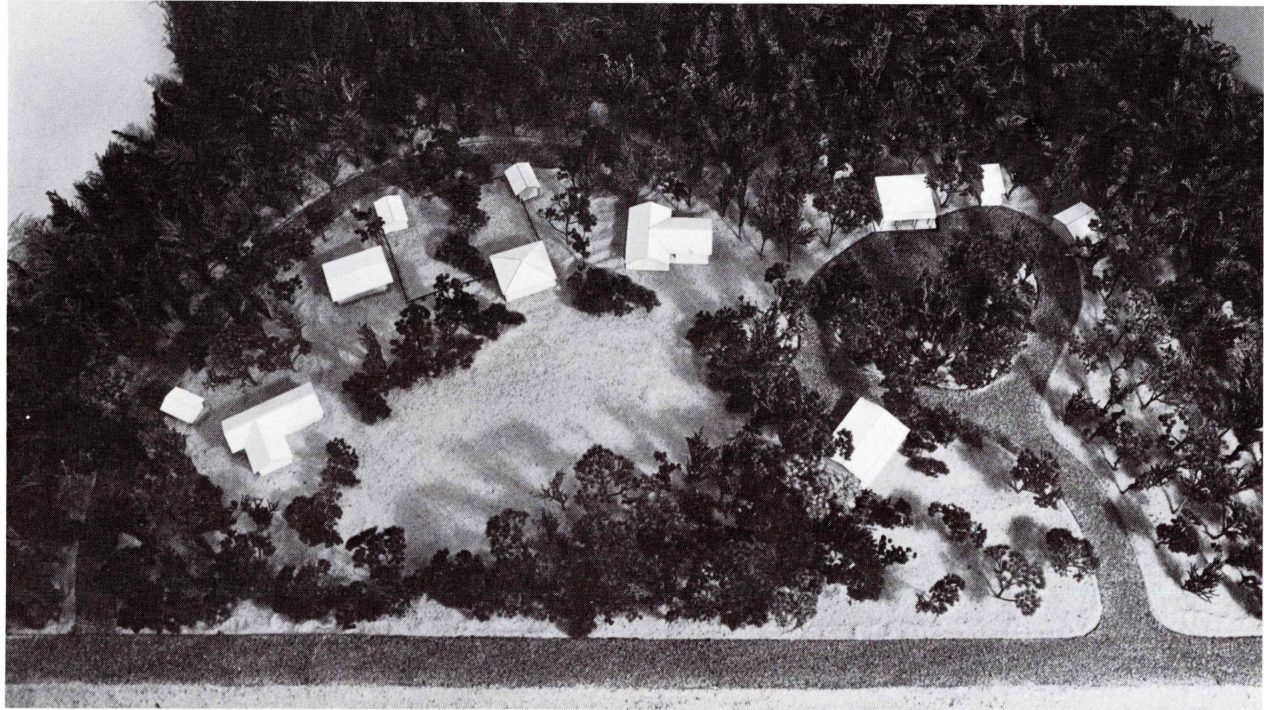




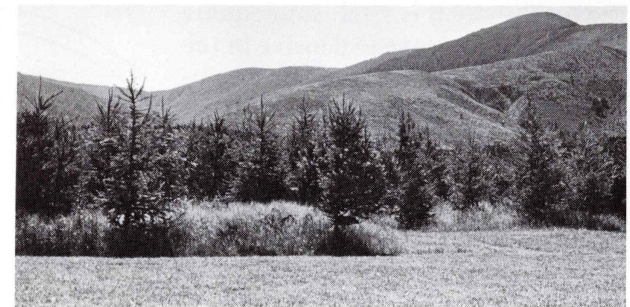
#### 4 Intensive Use Areas

In the process of developing the general layout the site will form into a series of open spaces. Planting will define the spaces. If the functions have been organised around natural features and site attributes, then vegetation, existing or planted, will form natural patterns. Long term maintenance should be considered at the development stage and a site with open spaces and planted areas is much easier to maintain than completely open areas with random plantings. Trees should be sufficiently close to shade out grass or underplanted with low growing vegetation.

The most significant vegetation is the tallest, which will provide linkages by being visually dominant, and the ground cover, which is the major long term management and maintenance cost. Both give continuity to the development. In the forest there is always continuity in canopy species, indigenous or exotic. Similarly ground cover, be it rough grass or indigenous regrowth, forms a uniform, if patchy, cover. Where possible these themes should carry through the intensive development areas. Large scale open spaces can be allowed to come back into indigenous growth where exotic weeds are not present or can be eliminated, or rough grass can be grazed or periodically harvested as is done on some fire breaks. Bare earth and mown grass should be avoided except in small select areas where detailed interest and intensity of use warrants high maintenance.



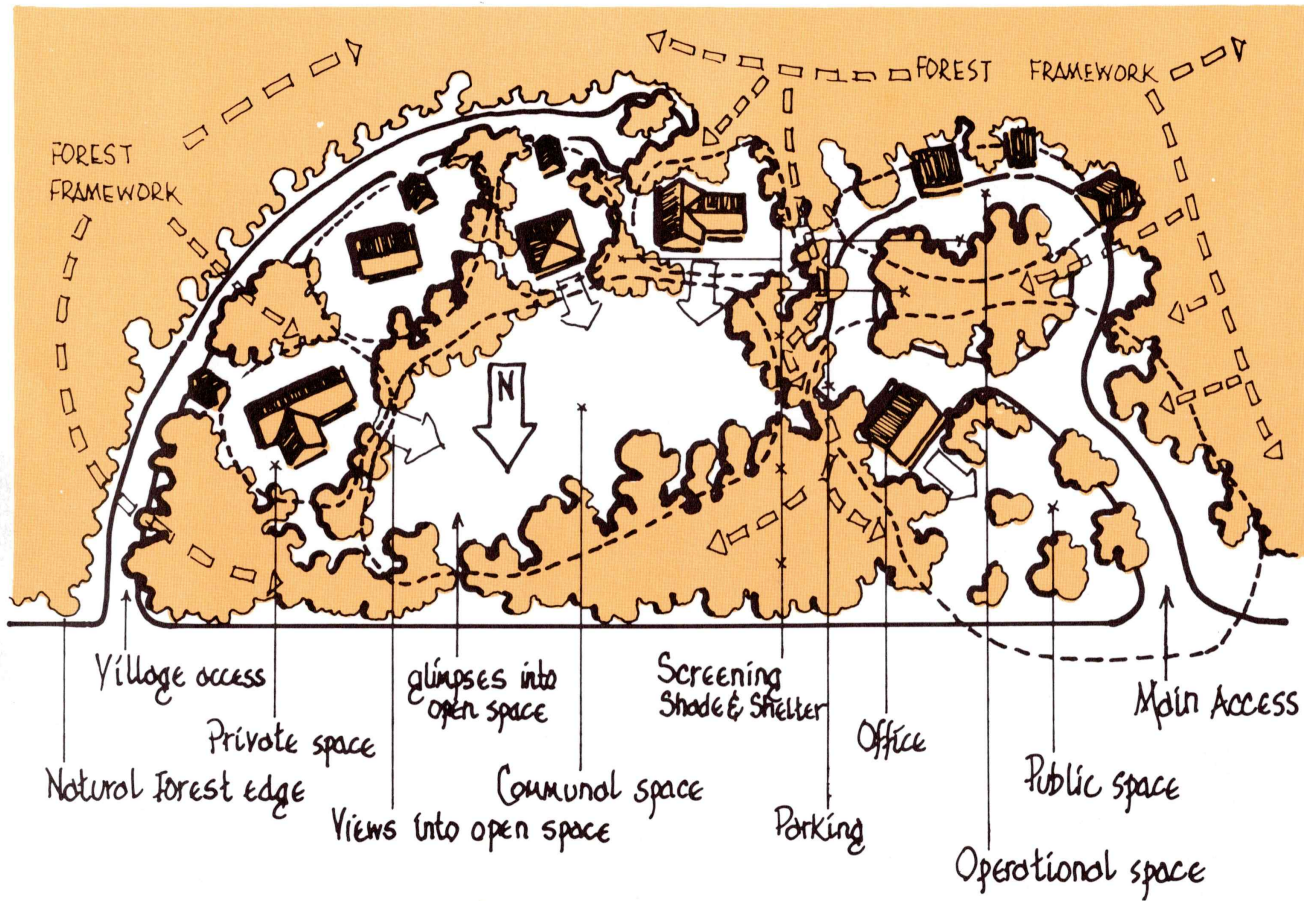
easy to maintain open spaces surrounded by planting



left, hay-making in city park  
right, a natural and easily maintained edge —periodic thinning will open this up



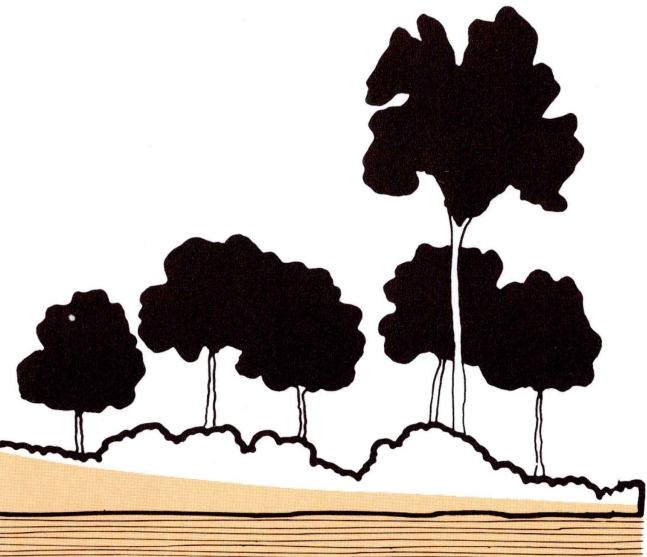
#### 4 Intensive Use Areas



right, self maintaining

maintenance input

maintenance involves holding vegetation at a stage in natural succession to suit use

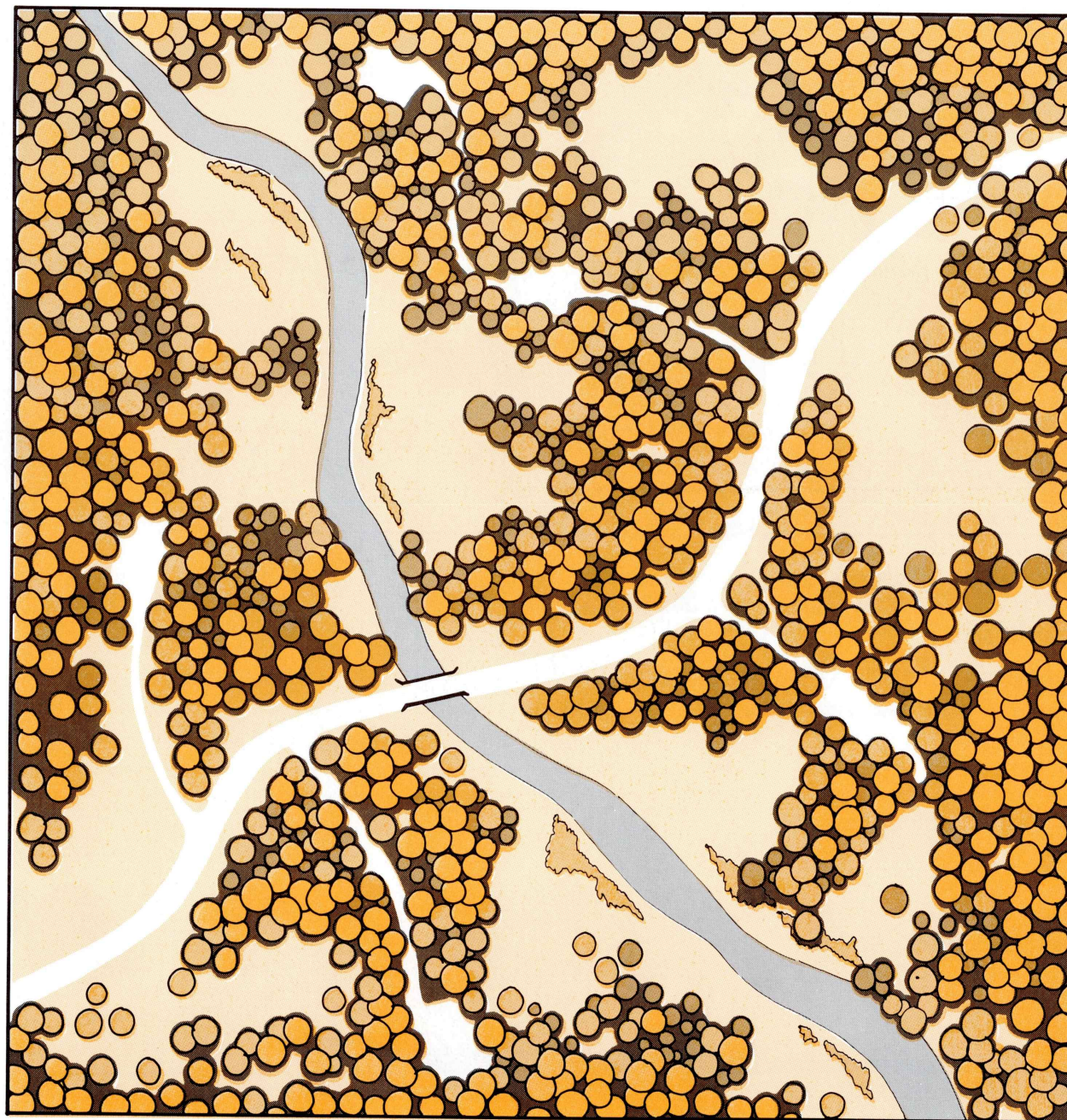




#### 4 Intensive Use Areas

**In a natural system no plan can ever be definitive; inevitably there will be unanticipated changes. This is what makes life interesting—the unexpected. Any plan must accept that vegetation evolves and changes, and rather than make definitive and detailed plans at the beginning, simply establish a framework which can be altered and built on as time passes.** Even where everything must be planted and there is no possibility of natural regeneration it is best to plant over several years, underplanting after the initial plantings have been thinned. Standard forest establishment techniques can be very suitable to larger scale intensive use areas, although trees should not be planted in rows. An initial dense stocking of two or three production species can later be thinned to variable stocking density and supplemented or underplanted with other species.

Planting should generally be in groups although occasionally a single specimen can be a feature and provide dramatic contrast. When too many “specimen trees” are mixed their individual drama is lost and a visual mish-mash results.



creation of  
spaces with  
two production  
species  
—initial diversity  
in space variation  
—later diversity  
in regrowth  
or secondary  
planting



#### 4 Intensive Use Areas

**It must be stressed that species should not be chosen in isolation from one another and without an awareness of the site.** The objective should not be horticultural. Too often a book of ornamental species is obtained and a random mixture selected for their “autumn colours and regular forms” without any consideration of what they will relate to on the site, whether their scale is right, or if they will fulfil the required functions. Often they are entirely wrong for the soil and climate, and languish in long grass unnoticed and uncared for.

The first reference should be to the species which are already present. In this way possibilities can be seen in relation to the particular environment rather than as isolated images and names.

List the possible local species and add to it from personal experience; forest managers are fortunate in moving around the country and seeing a wide range of species in many different situations. In most forests indigenous species are, or have been, present. If indigenous species are planted it must be according to their place in a natural succession; pioneering species may need to be established to create the appropriate microclimate for later planting. Alternatively, exotic species may be used to create the necessary shade and shelter for the subsequent planting of less hardy species, indigenous or exotic.



groups have  
impact

so does  
topping and  
gross pruning

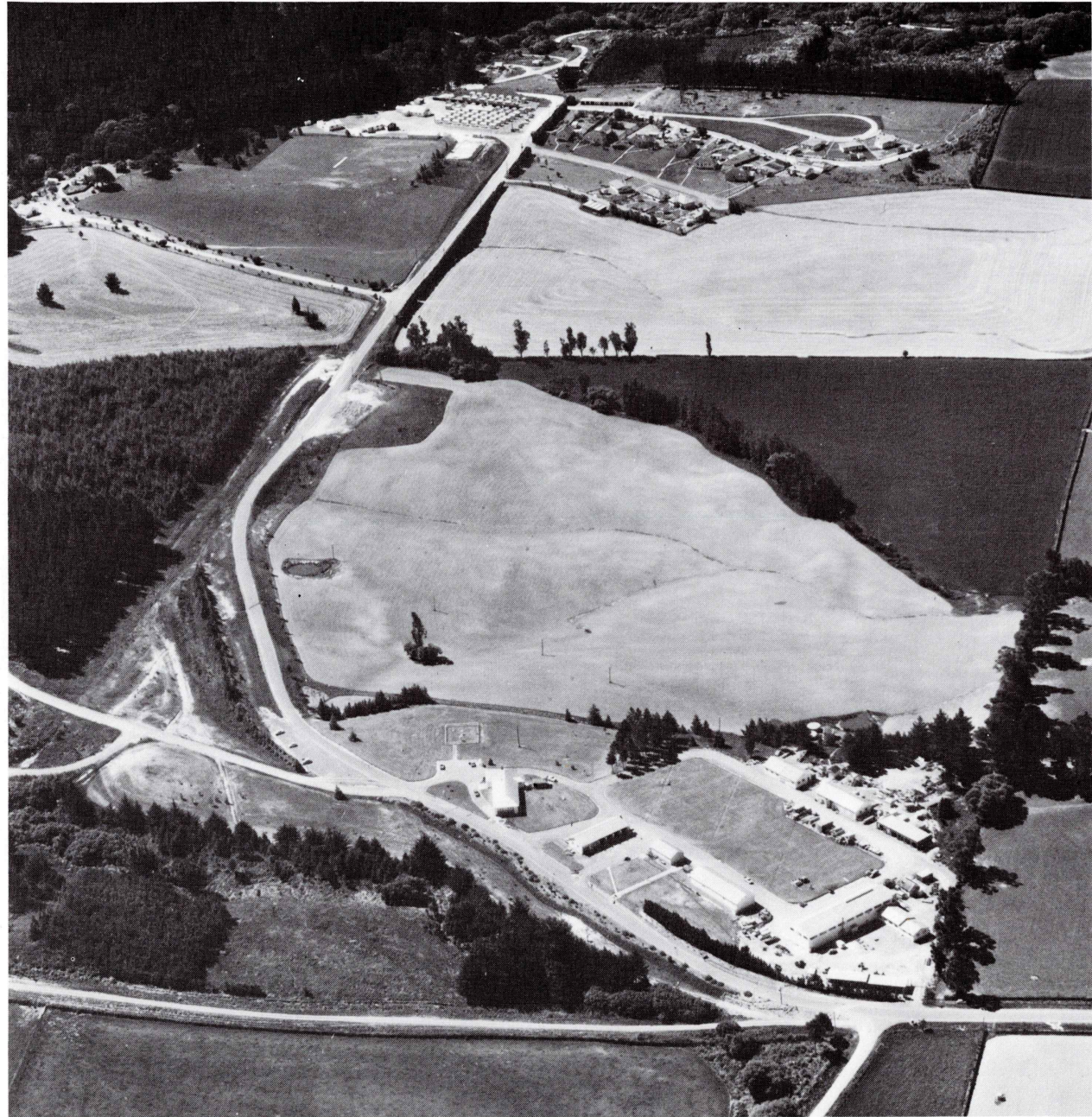


#### 4 Intensive Use Areas

The next question is where to plant what, bearing in mind the ecological limitations of each species, and the human needs of shade, shelter, sun, views, unity, and diversity. Your plan will suggest obvious possibilities and constraints. It may be useful to have species sorted into groups—tall, medium, low, shrubs, ground cover.

The first plantings to consider are those which will become tallest or dominant and those which will eventually cover the ground. Trees typical of the surrounding forest can be used in the developed area, or plantings or species used around the headquarters can be extended into the forest.

If the intensive use areas are developed at the same time as the forest then integration is far easier. Potential intensive human use areas, for recreation or settlement, should be considered during the planning stages of forest development. A framework can be established to define open spaces and additional species planted later to add diversity. The dominant species should be chosen with future management in mind. There is no reason why production should be precluded in intensive use areas so long as other values are not unduly affected. Tree removal is infinitely preferable to topping or gross pruning.



Ashley HQ  
(photo—V. C.  
Browne)



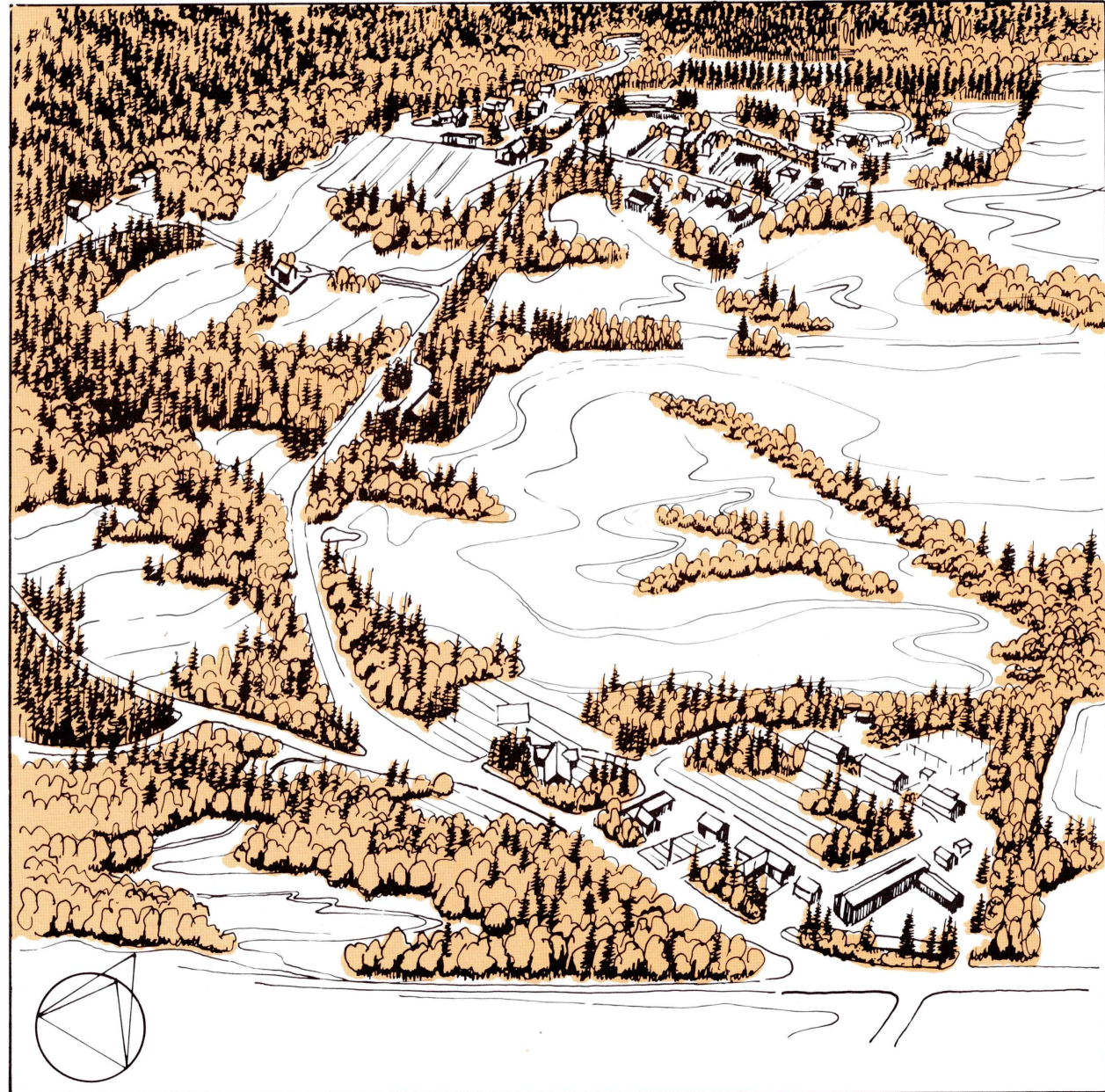
#### 4 Intensive Use Areas

After the dominant species are established and areas of rough or cut grass or remnant scrub defined, secondary species can be chosen. Dominant species will generally be tall but may include medium sized trees. Secondary species will generally be medium sized but may include some taller trees. These add interest by introducing diversity. They can be used in groups of the same species or in groups of mixed species; in uneven and random groups throughout an area; near significant points such as water; or in other places of particular visual interest.

**Species used for diversity should not be so overwhelming in their numbers and variety that they destroy the unity.**

Low growth, small trees, shrubs, and ground cover must be considered next. Even where rough cut grass predominates there may be areas such as canopy edges where an alternative ground cover like periwinkle, ivy, or hebes may be used to advantage. Again there should be some sense of unity. Isolated shrubs, like trees, often look lonely and depressed. Bulk planting is infinitely better so that it assumes substance and can provide shelter, barriers, or screens, as well as giving form to the whole area.

Selection of species is important—and everyone responds to variation in colour, form, texture and has preferences—but this is less important than how they are arranged, the form of the planting and the spaces it defines. A painting may be admired for colour, texture, technique and subject matter but ultimately it is how the whole thing is put together which counts.



Ashley HQ  
trees give  
emphasis to  
landform  
—separate use  
areas—define  
spaces—fulfill  
human needs









# Design Notes

5



## 5 Species

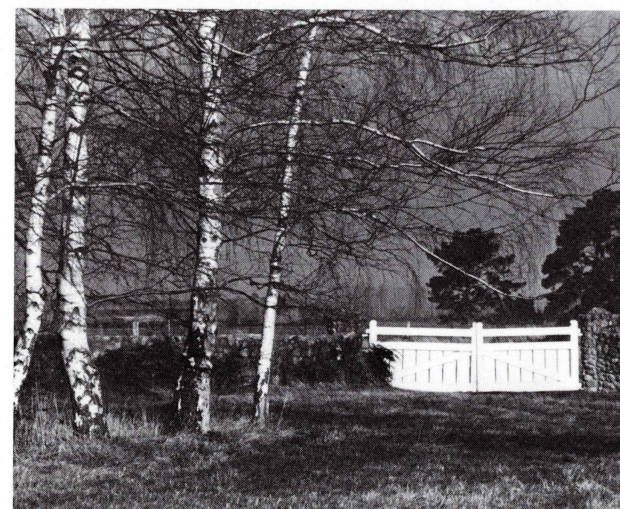
This section is concerned with the context and values of trees and shrubs in the general landscape, and the forest manager's responsibility to recognise natural systems.

- It is not possible to prescribe a species list to cover all sites in the country.
- The range of potentially suitable species will be limited by individual site conditions, past experience, and proposed management of the area.
- There is a wealth of information available on species suited to New Zealand conditions in other publications. These should be used as a last resort and only as a general guide. The planner should first look at the plants already growing in the regions. This increases awareness of the greater area and species are seen as they are rather than as they are described. This can be reinforced by talking with people who know the area well and have experience of the plant growth within it. The planner becomes aware of how species look in the region, and of their relationships to site and other species. This is particularly important for native species which grow in relationships evolved over long periods.

The value of plants is rarely purely "ornamental" or "amenity", they also have a functional value. To describe a tree as only "ornamental" or "amenity" is to denigrate its character and purpose. "Beauty" usually coincides with function. In the native forest "beauty" exists not just in the "ornamental value" of individual trees but in the relationship between species within their landscape context.



naturally evolved relationships



right, man imposed  
—simple  
—functional  
—natural



## 5 Species

In an exotic forest the aim is to satisfy the broadest possible spectrum of human and ecological needs by choosing species which have a diverse range of functions.

**All plants, especially trees, have the important primary function of protecting soil and water. All forests fulfil this function and only supply wood within this constraint.**

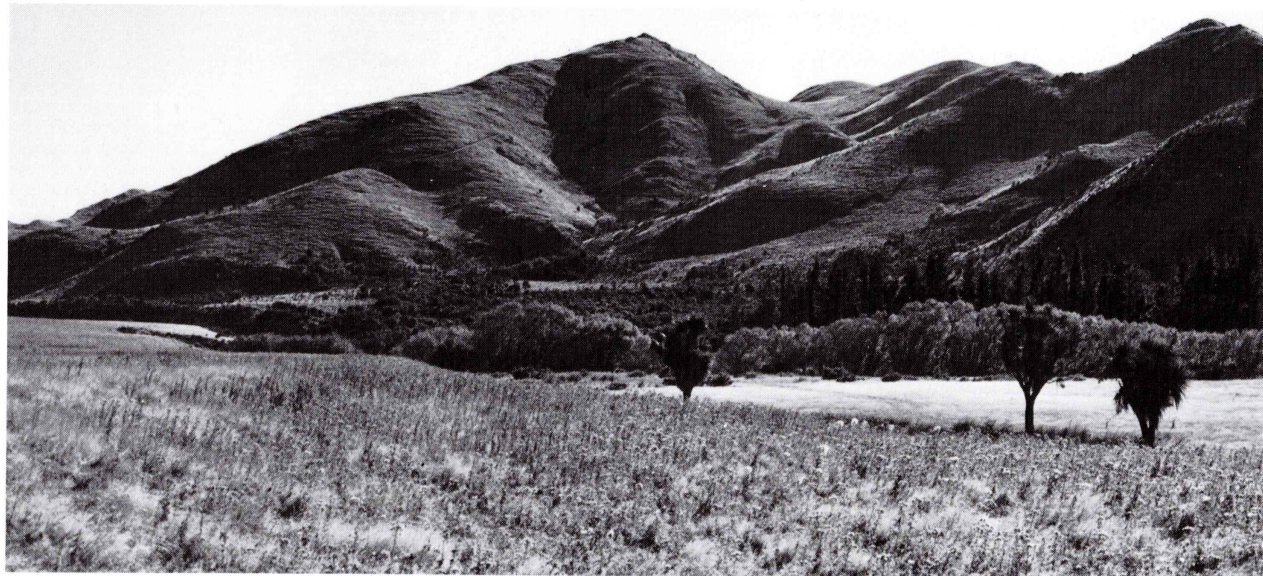
There are some species whose primary function is soil and water conservation. The soil/water margin is a fragile component within the landscape and any detrimental impact in the catchment will affect areas downstream.

Because of this interdependence the margin between land and swamp, stream, lake or coastline must be sensitively managed by:

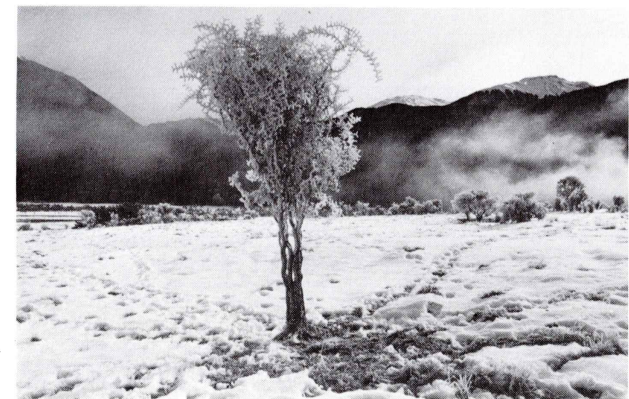
- retaining vegetation on the margin;
  - establishing buffer zones with species that will benefit from the improved soil moisture status, fertility, and shelter usually provided by these sites.
- The species selected should have a long rotation to provide a buffer between the water margin and upslope logging, produce a high value end product, and be suited to selective felling techniques.

Whether a permanent cover is required or some selective wood removal is acceptable there will be both native and exotic species which are suitable.

Wood production species form the framework of the created forest. Exotic species highly valued for their wood production potential in New Zealand are familiar names. For every site there will be a range of proven species which can be used to create diversity.



initially functional—willows evolve to find an appropriate place



left, trees have aesthetic values  
right, trees have functions

### Some Major Production Species

Cupressus macrocarpa	Eucalyptus botryoides
Eucalyptus delegatensis	Eucalyptus fastigata
Eucalyptus regnans	Eucalyptus saligna
Larix spp.	Pinus muricata
Pinus nigra	Pinus ponderosa
Pinus radiata	Pseudotsuga menziesii



## 5 Species

**All trees have an aesthetic value.** Some may be regarded as more valuable than others because they are seen less often, or have particular beauty or wood quality. Some will be unsuitable where development favours longer term species and minimum site management or disturbance. But all production species have a landscape value if they are planted in the correct relationship to the site and each other.

There are many trees which, although they don't produce large volumes of wood with a wide range of end uses, can provide diversity in wood products for special purposes. As well as producing special timbers, they add diversity to the ecological systems of which they are a part. Such species are often highly site specific and should not be grown where they will languish; a healthy conifer is better than the most beautiful hardwood if it is 'off site' and unhealthy.

The production of pollen and nectar is a secondary but important forest value. Most of the nutrients needed to build up hives in the late winter and spring come from trees and shrubs so off-site benefits can be gained by including species from this range. The list is arranged to show when nectar and pollen production is highest.

Many other species are either not compatible with the general objectives of forestry, or high quality sites are not available on forest lands for them, but where small scale opportunities exist further options can be considered. Nuts, fruit, bamboo, and cane are potential products from forestry land. Many species can be grown within a forest, and although they are unimportant compared with the main crop, they can have significance in limited situations.



impact in scale and simplicity

### Nectar and Pollen Species

#### Spring

Acacia spp.  
Cytisus proliferus  
Salix caprea  
Acer pseudoplatanus  
Aristotelia serrata  
Crataegus oxyacantha  
Escollonia macrantha  
Hebe salicifolia  
Olearia ilicifolia  
Pittosporum eugenioides  
Plagianthus betulinus  
Rubus australis  
Salix fragilis

Calluna spp.  
Eucalyptus globulus  
Sophora microphylla  
Aesculus hippocastanum  
Corylus avellana  
Escallonia exoniensis  
Fuschia excorticata  
Nothofagus fusca  
Phormium tenax  
Pittosporum tenuifolium  
Pseudopanax simplex  
Salix babylonica  
Sorbus aucuparia

#### Summer

Corokia cotoneaster  
Hoheria lyallii  
Leptospermum scoparium  
Nothofagus solandri var. cliffortioides  
Robinia pseudoacacia  
Weinmannia racemosa

#### Autumn

Carpodetus serratus  
Eucalyptus regnans

#### Winter

Acacia spp.  
Pseudopanax colensoi

Eucalyptus gunnii  
Leptospermum ericoides  
Metrosideros umbellata  
Pseudopanax edgerleyi  
Tilia vulgaris

Eucalyptus delegatensis  
Olearia paniculata

Pseudopanax arboreum

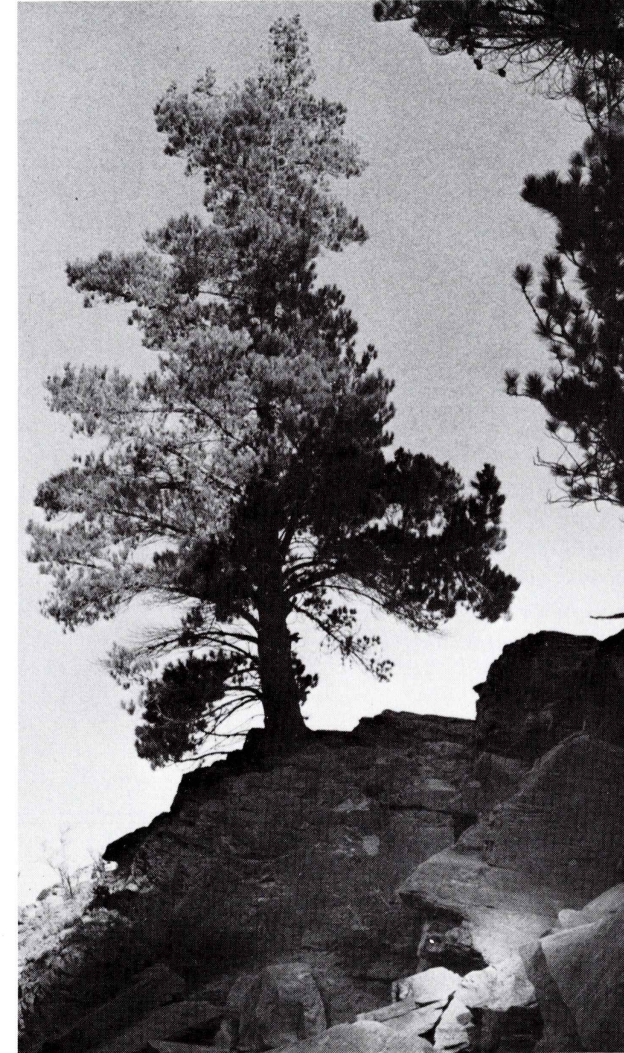
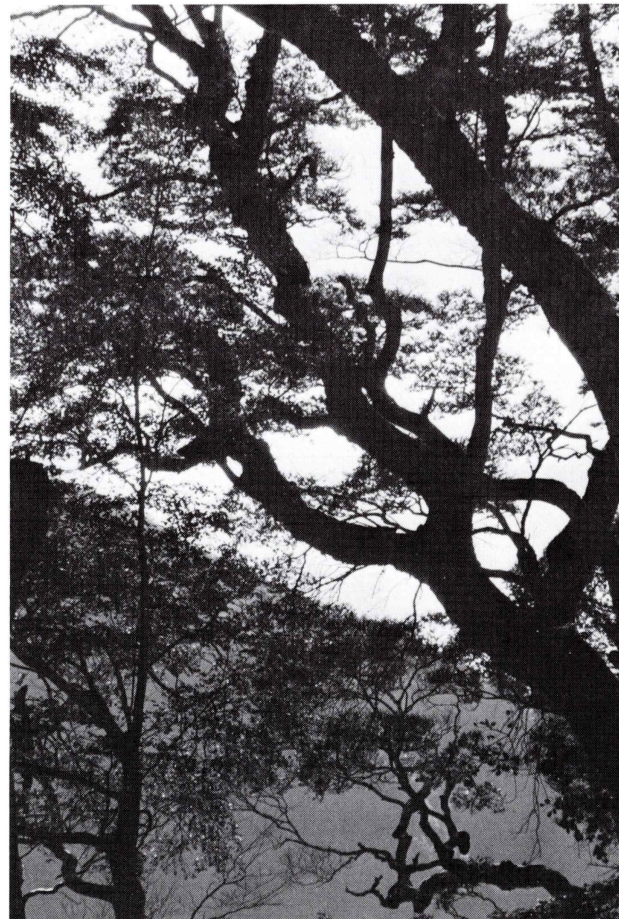


## 5 Species—and the evolving landscape

Species diversity reflects both natural and cultural influences. Natural diversity shows that site and growth influence vary, and cultural history has evolved a pattern of development which reflects this—the areas with the greatest and easiest-to-exploit potential have been altered most. Earliest settled areas have the greatest diversity of introduced species and untouched areas retain the greatest natural diversity. Between the two are areas where various pressures have evolved a large scale sameness.

Forest species must respond to the **particular** situation. They must accept necessity but not deny diversity. Diversity cannot be imposed; it evolves. The natural process is for pioneering species to colonise a site and then for others to follow, a few at first, then those most suited to increase their hold. On hard sites there is pure beech, and on easy lowlands a complex mixture of podocarp and hardwoods. The uplands are large scale and rugged with a relatively uniform tree cover. The lowlands include smaller pockets of complex diversity. Introduced species are beginning to reflect the same patterns.

Pines are the hardiest of the introduced species and radiata best combines biological adaptability with social necessity. Pines are not incompatible with the natural landscape. They can be absorbed provided they do not dominate and their patterns are appropriate in form and scale. On hard inland sites natural diversity is least threatened as there are few viable introduced species.





## 5 Species—and the evolving landscape

In new large scale development areas the options for introduced diversity are as yet poorly defined. Forest development should preserve a matrix of native vegetation where this exists, and reserve areas where there are viable alternatives to tree growing. The planting of remaining areas in radiata pine as the pioneering species is a rational response to the present stage of the evolving landscape. Other species should be planted in sufficient numbers to determine their suitability, but in the early stages it is unlikely they will be sufficiently tested to justify large scale planting. **All species should be sited according to their best understood requirements rather than as a visual diversion.**

In this way natural diversity is protected, options are reserved, and an introduced pattern which can evolve is imposed. Proven alternative species can eventually move on to sites pioneered by radiata pine. This approach is not unsympathetic to the character of the evolving landscape but is a response to it.

In developed areas introduced diversity predominates. Early man-made forests which managed to find their way on to better sites had a greater diversity of options from the outset and the scale of planting was small. Alternative species can now be sited according to their needs for moisture, soil quality, and shelter—according to natural landscape patterns. The landscape character of these forests is humanized and intimate. The forests are evolving a harmony with their surrounding landscape.



left, managed by man  
right, managed by nature

### Some Minor Production Species

Acacia melanoxylon	Pinus patula
Pinus pinaster	Pinus sylvestris
Sequoia sempervirens	Sequoiadendron gigantea
Thuja plicata	
Acer pseudoplatanus	Castanea sativa
Fagus sylvatica	Fraxinus excelsior
Juglans nigra	Juglans regia
Platanus orientalis	Nothofagus fusca
Agathis australis	Nothofagus solandri var. cliffortioides
Nothofagus menziesii	Dacrycarpus dacrydioides
Beilschmiedia tawa	Podocarpus ferrugineus
Dacrydium cupressinum	Podocarpus totara
Podocarpus spicatus	

left, freedom within order

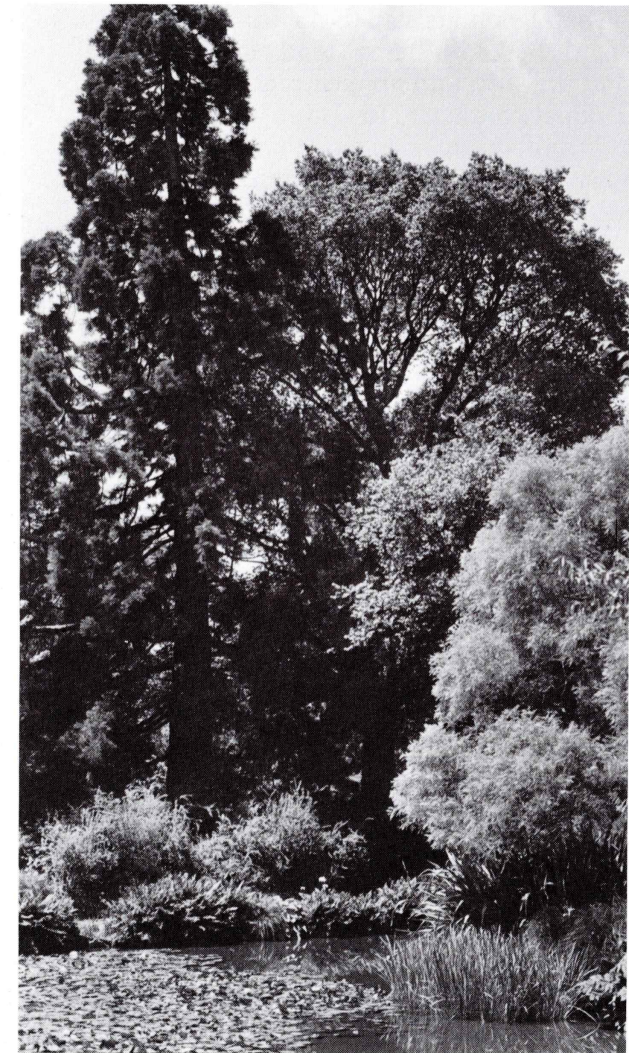
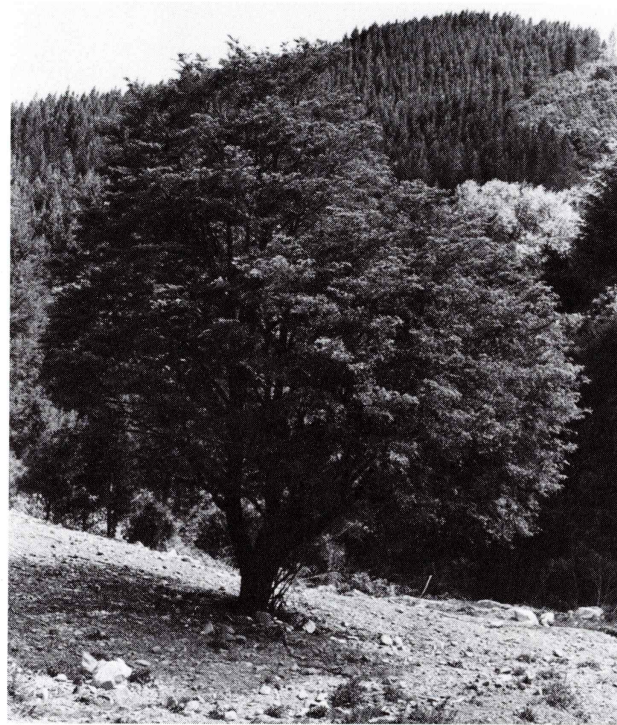


## 5 Species—and the evolving landscape

When creating or altering forests species diversification must be according to the broad landscape patterns rather than small scale aesthetics. Species used in a small scale aesthetic sense are often out of context with the broader landscape and of transient value. Diversification must aim to add a sustainable creative value with a long-term biological perspective. **We must aim to expand sustainable diversity rather than impose transient aesthetics.**

Alternative species should be used in accord with the stage of evolution at each place and where there is a reasoned biological chance of success. This will not contradict the broad scale character of the existing landscape but will pioneer a rational and sustainable potential.

**Species diversification should be according to the defined potential; at a maximum where the potential is good and the options clearly defined—at a minimum where there is least potential and the options poorly defined. It will then be in harmony with the evolving landscape of which it becomes a part.**



beauty in form  
and relationship



## 5 Signs

New Zealand's urban landscapes all look much the same. Consequently sign systems tend to be unimaginative and uniform and applied regardless of a place's individual character. In contrast rural landscapes are infinitely diverse, so that considerable flexibility is needed to design signs that relate to the surroundings.

Urban signs are often ugly, redundant, and fiercely competitive to achieve their commercial objectives. There is no need for this in the rural environment where there is plenty of space and no competition. Signs should harmonise with the environment.

This section cannot provide the right answers for every situation needing a sign, but it aims to set guidelines and provoke the right questions.





## 5 Signs—why signs?

Signs are needed to help others to enhance their experience of the forest environment. They are a link between you, someone else, and the environment you share.

Signs locate, inform, and direct. They help people relate to a particular place and give them the security to move about. Some people need more signs than others, so the audience at which the signs are directed must be carefully considered.

Signs do not always have to be written messages—many objects and scenes speak for themselves. Good design can often direct people cancelling the need for written signs. They should be a last resort, used only when an important message will be missed without one.

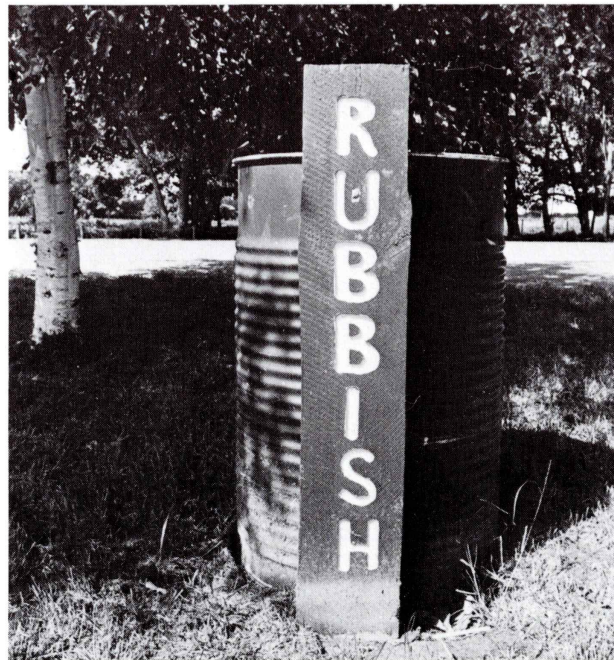
Signs help to direct activities and experiences, and give coherence to the experience because they are part of it. They must relate to one another, and to the environment or experience. They must not become the 'experience' by completely dominating the situation they describe. An interpretive trail should not read like a newspaper.

Before deciding on a sign ask yourself these questions:

- Can you give the message without a sign?
- Who will read the sign?
- What should it say to them?
- How can it be appropriate to the environment?
- How can it best enhance the experience?



signs can be distracting



left, unnecessary  
right, clutter











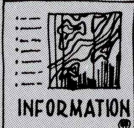
## 5 Signs—hierarchy

**National signs:** Protection of people and forests is of major national concern. Fire threatens both. Fire hazard signs do more than show the level of risk, they symbolise danger, and people recognise this. Reiterated symbols create a national awareness.

Fire signs need national uniformity so they are immediately recognisable to all, similar to road warning and speed signs. These issues are so important that they deny individual treatment of the panel, though frames and support structures should be consistent with the local scene and signs.

National identification of State forests is achieved by using the Forest Service symbol. It should appear on all major signs. The quality of the sign and its surroundings tells people not only who is responsible for the forest, but something of the attitude of the organisation.



National Signs and Symbols	    
Regional Signs	 <div data-bbox="1332 909 1467 973">HAMMER FOREST PARK</div>  <div data-bbox="1545 909 1758 941">ASHLEY FOREST</div>  <div data-bbox="1579 973 1758 1029">CRAIGIEBURN FOREST PARK</div>  <div data-bbox="1859 997 1982 1029">INFORMATION</div>
Individual Forest Signs	<div data-bbox="1220 1069 1444 1117">DEWAR'S ROAD</div> <div data-bbox="1220 1133 1444 1181">QUARRY ROAD</div> <div data-bbox="1220 1197 1444 1244">OKUKU RIVER</div> <div data-bbox="1523 1069 1758 1133">ASHLEY FOREST Mt Grey Bush</div> <div data-bbox="1523 1149 1758 1244">Lake Janet picnic area lookout</div> <div data-bbox="1848 1069 1982 1244">Mt Thomas lookout</div>
Specific Areas Within Forests	<div data-bbox="1187 1284 1467 1388">mt grey bush information</div> <div data-bbox="1523 1284 1758 1388">Mt Grey Bush</div> <div data-bbox="1523 1348 1758 1388">nature trail easy walk for children 7yrs+ 45 mins</div> <div data-bbox="1780 1284 1982 1388">grey river east branch walking track 5 hrs lookout walking track 2 hrs</div>
Trails or Walks	<div data-bbox="1187 1420 1288 1492">nature trail easy walk for children 7yrs+ 45 mins</div> <div data-bbox="1523 1420 1758 1492">nature trail easy walk for children 7yrs+ 45 mins</div> <div data-bbox="1881 1420 1982 1492">nature trail easy walk for children 7yrs+ 45 mins</div>



## 5 Signs—heirarchy

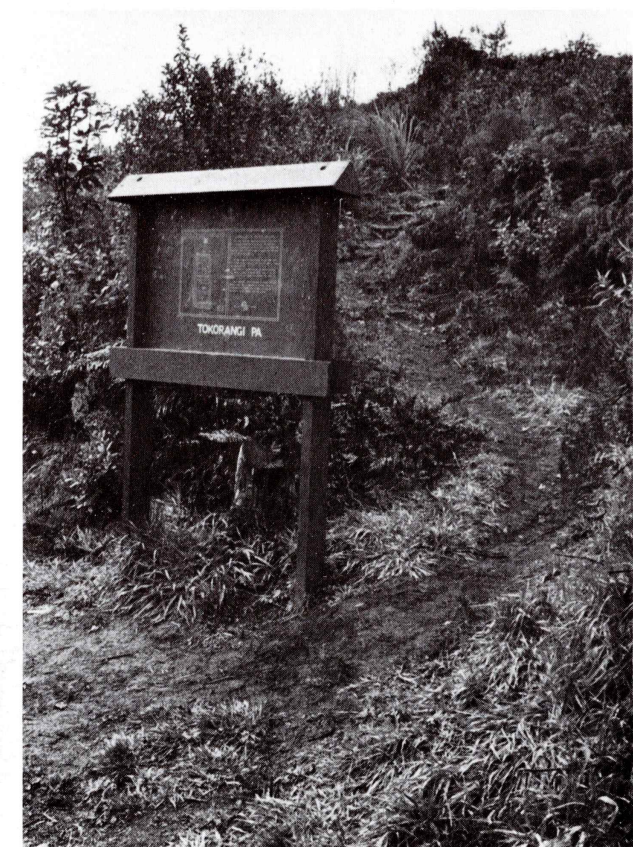
**Functional signs:** These include road and operational signs necessary for efficient forest management and functioning. Their main aim is to direct people working in the forest, but they also inform the public. They should be uniform within a forest or region, rather than nationally, because:

- designs suitable for one region or forest could be quite incongruous in another because of the diversity of landscape character.
- Local people relate better to a local information and publicity format than a national one.

The extent of unity within a region is debatable. One possibility is to have all major signs (e.g. forest name, main recreational areas) seen from outside the forest boundary unified within an area. This gives regional cohesion but allows freedom to develop appropriate and imaginative sign systems within the forests.

**Public signs:** These will be different from functional signs because their target audience is not as familiar with the forest as those who live and work in it. They are important because they lead people through an experience. They may also convey information which enhances the experience.

Public signs may be distinctive in design, but can still retain some coherence with functional signs, for example, lettering style. Design should be consistent in a specific recreation area, but within this there could be an interpretation trail which requires individual treatment.



left, functional-  
legible  
right, easy to  
read—frame in  
context

left, low profile  
but clear  
right, evocative  
design—quality

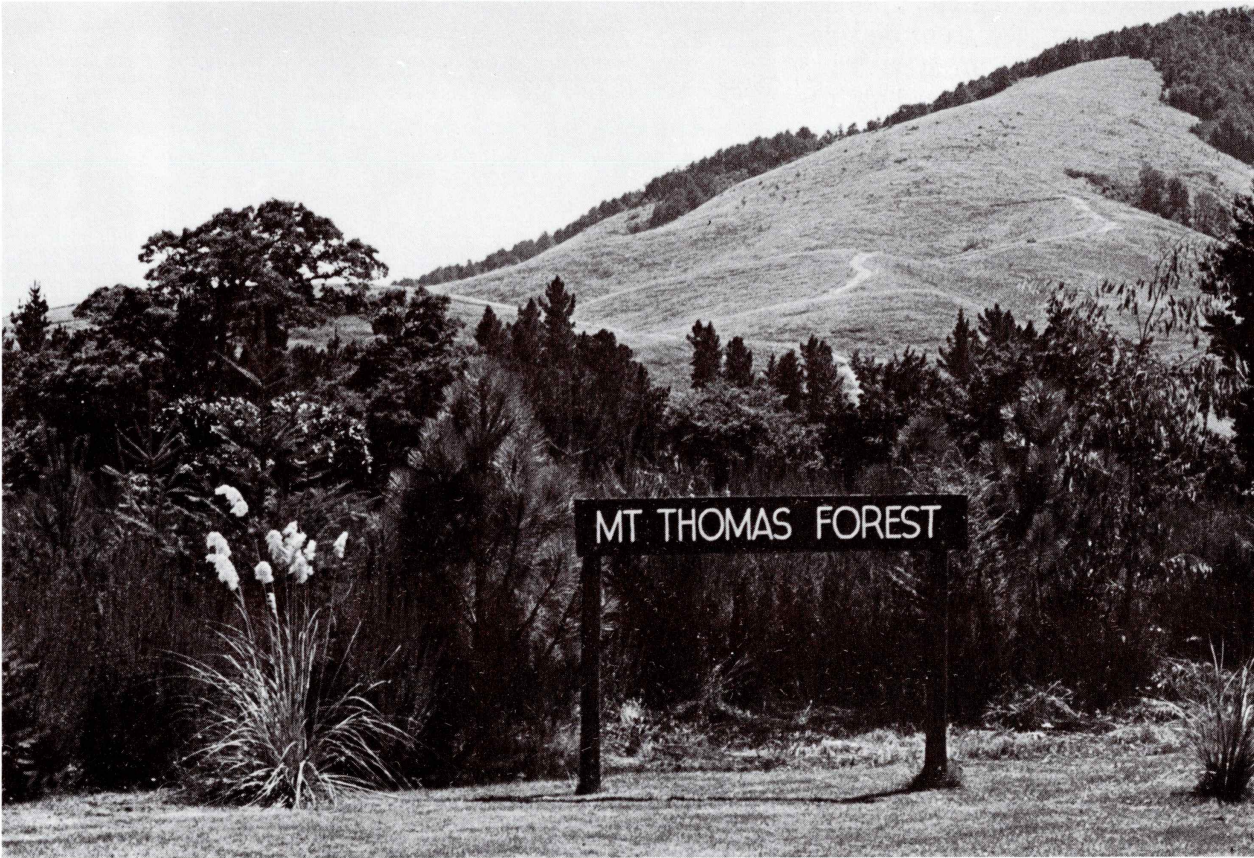


5 Signs—letter size

Lettering size should vary according to the distance from which the sign is to be read. The length of the message must be related to the time available to read it.

Lettering, wording, and line spacing have a tremendous influence on legibility and appearance. The table gives some guide to letter sizes in relation to passing motorists. These figures, based on US and Canadian sign manuals, will help to determine letter size according to the approach speed and reading distance.

Approach Speed kph	Reading Distance m	Capital Letter Heights mm
80	120	300
80	90	225
50	60	150
30	45	115
15	30	75
15	23	56
0	15	38
0	11	28
0	8	19



good proportion



## 5 Signs—letter style

Diagrams, pictures, and symbols may be better than words on some signs. However, words will often be used and should be pleasant and evoke co-operation. Lettering should be simple and easy to read.

Lettering style can be used to convey three basic attitudes:

- **Simplicity and freedom:** This applies to most situations and the Helvetica style is most appropriate. Many of the routed forest signs in forests are this type, illustrated as 'Univers'.
- **Official and cautionary:** To warn, or stress the need for care. 'Plantin Bold' is a suitable official letter face.
- **Reverence or intrigue:** Old fashioned lettering takes people into the past and used with care can be appropriate for historic sites. Old newspapers and posters may give a lead.

As a general rule it is best to stick to one letter style on any one sign. There are exceptions, and combinations can be extremely effective, but they must be chosen with care. A hierarchy of directions or messages can be given by using upper and lower case letters with different letter sizes. Usually lower case is 2/3 the height of upper case.

**UNIVERS**UniversUniversUniv  
**PLANTINBOLD**Plantin Bold Plantin  
**PLAYBILL**PlaybillPlaybillPlaybillPlay



left, no freedom  
right, message  
emphasis in letter  
size



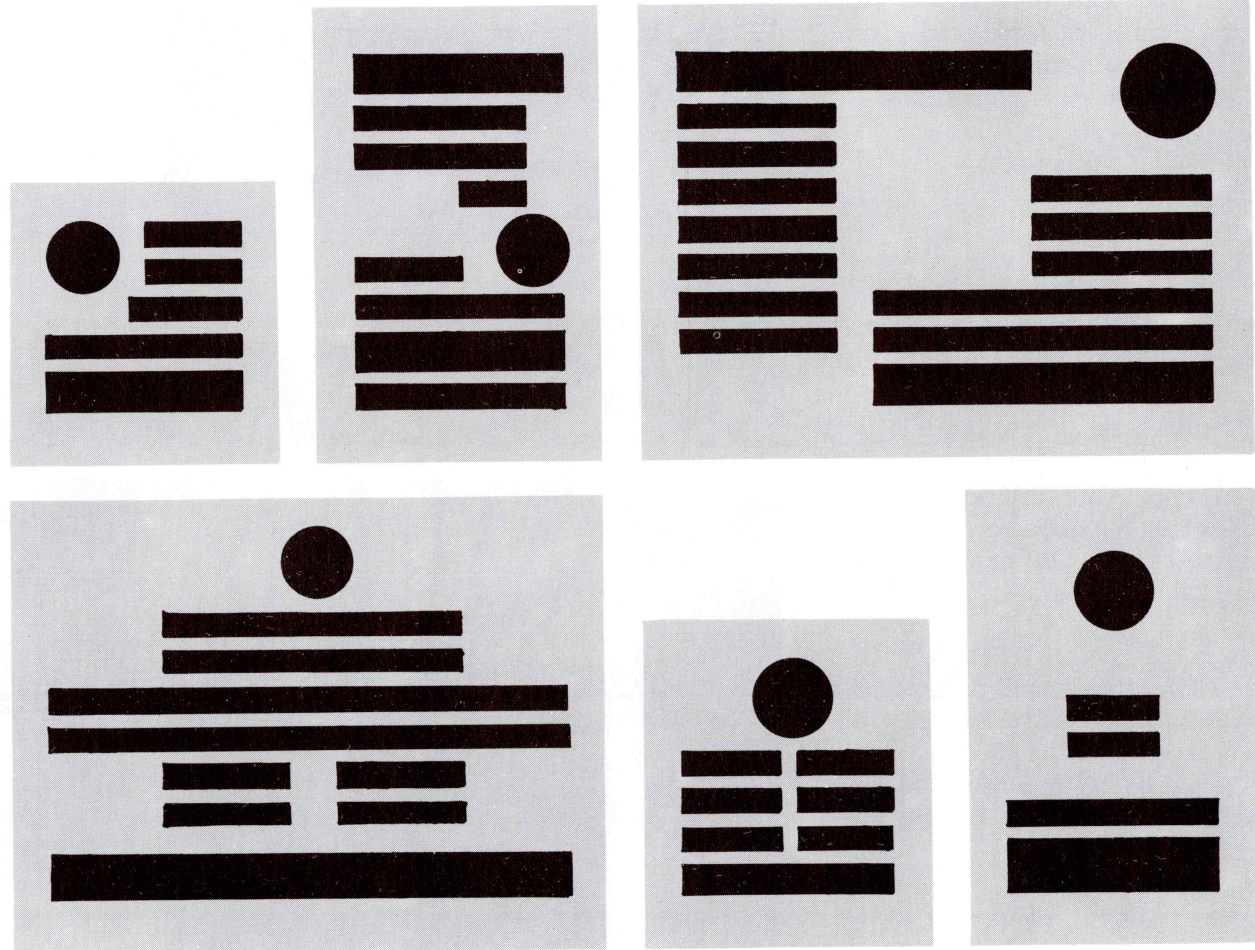
## 5 Signs—layout

**When designing signs it is essential to either draw the sign to scale, or draft the whole sign to actual size on paper before any final work begins.**

Various options should be sketched and discussed with others familiar with the site and the project. There should be constant discussion at all stages of developing the sign. This is better than rules which, no matter how comprehensive, will always miss the exception.

Some hints:

- Leave plenty of open space so that messages are distinct.
- Keep the impact of each message appropriate to its importance. Use upper and lower case combinations, with different letter sizes if necessary.
- Balance the information so the visual weight is evenly distributed on the sign. On large, complex signs it is essential to draft the information in paragraphs, blocks, etc. and move these about until a balance is achieved.



asymmetrical and  
balanced

symmetrical and  
balanced



## 5 Signs—methods

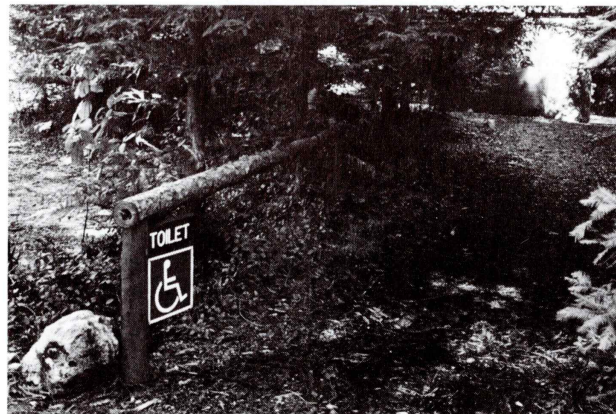
There are many techniques for displaying information on a board, and many are in use in the Forest Service. These are some possibilities:

**Routing:** All conservancies have routers and most new signs are produced this way. Freehand routing is generally used but other systems have been produced that give greater precision. In one, the router is held in a frame which reproduces the movements of a tracer arm following a stencil. \*Another system relies on templates of different typefaces to guide the router.

Basic routing which produces rounded letter ends is satisfactory for functional signs, but to achieve a high quality letter face the ends should be squared with a chisel.

**Silk screening:** This process is now available in all Conservancies and produces a high quality finish. A photo process is available for transferring a draughted sign onto the silk screen. For both this technique and the method outlined, consultation will be required with people familiar with the process and who have access to the necessary materials.

**Photometal plates:** Information is photochemically etched onto aluminium foil. A negative photograph, drawing, print, etching or script is transposed onto the foil chemically. The completed foil is then fixed to a backing board and frames. This is a specialised process which can be extremely effective.



left, robust and clear  
right, these symbols are internationally recognised—they can be used on printed matter and in the field

to restrict an activity a red slash runs top left to bottom right

\* router plans available from Rotorua Conservancy N.Z.F.S.



## 5 Signs—design

In any social group there is a desire for shared values and symbols. There is also need for individual expression and identity. The Forest Service carries out activities over a broad landscape spectrum involving many different people, so although it must project a national image, it must also respond to unique local and forest identities.

The basic aims are simplicity and quality. Always convey the message clearly. There are always options so careful choices must be made.

Colour, line, texture, shape, and scale are important if the sign is to be in sympathy with its surroundings.

If the background is a large-scale landscape of massive hills and mountains a bold design is appropriate. If the sign will be situated in an intimate valley with smaller details then a smaller sign is required. Generally vertical elements, such as trees, should be repeated in the design and flat open areas demand a low profile.



signs successfully integrated with other structures



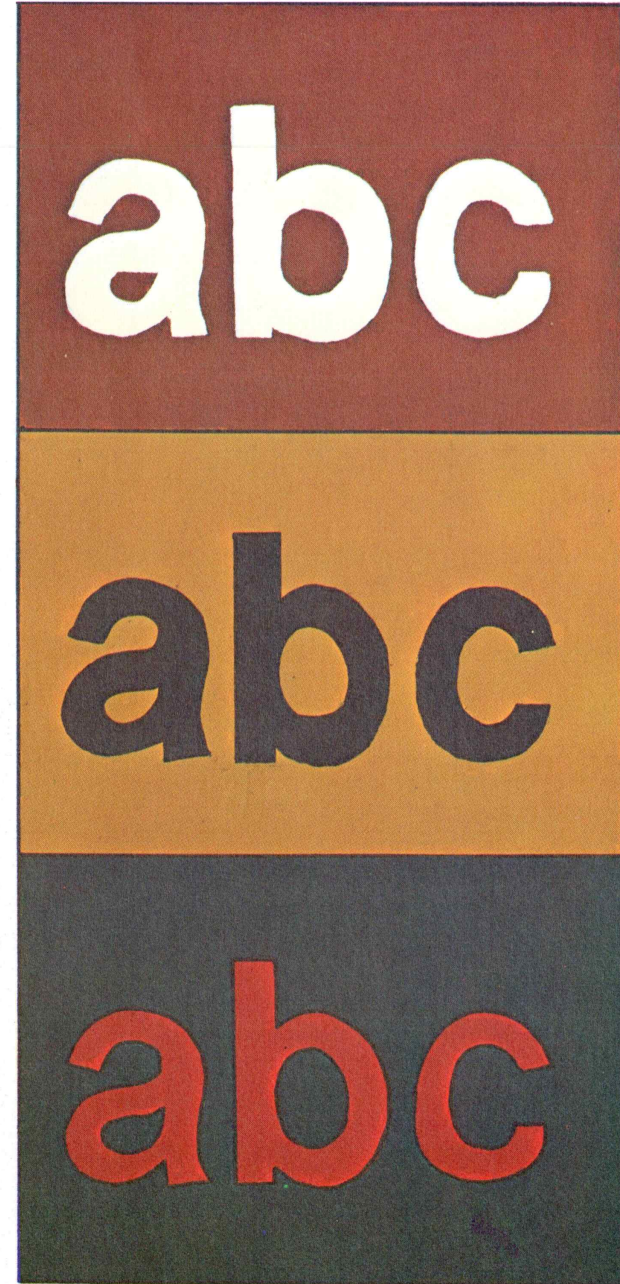


## 5 Signs—colour

**The colour of a sign should be compatible with the main background colours without losing definition of the panel's form.**

Colour compatibility is achieved by ensuring there is similar weight (reflectivity) on the sign and the background. The actual hue (colour) is of secondary importance, so there is a greater range of colours available than just the traditional green and brown. The colour of the lettering must contrast with the panel so the message is legible. (See colour p.112). Forest managers should select a paint or stain to use for all sign panels so that continuity is achieved.

Raw timber signs are an easily produced, low maintenance option which can never look wrong in a forest. Routed lettering can be painted without concern for neatness as the board can be sanded down to produce a clear face with crisp letter edges.



left, simple colour identification

right, contrast in—  
reflectivity  
reflectivity  
colour  
but similar  
reflectivity

left, clean design in raw wood



## 5 Signs—construction and materials

Forest signs are best made from natural materials using colours suitable to the forest environment. Wood is a beautiful material—especially raw wood in solid pieces and simple forms. It can be untreated, preservative treated, stained, painted, shaped or routed. Wood is versatile, robust and easily replaced.

Other possible materials include sheet metal, plywood and chipboard. The sign board may be mounted on stone and this must be considered in treating the board.

Stains are often used because they are easy to apply and the wood grain character is retained, however, stains can wash out and fade in the open.

Acrylic paint is often better than oil based paint because it is easier to use and does not require separate priming. The paint can be easily used in the field for touching up.

For someone familiar with building this will be largely a matter of common sense. Sign boards have to hand on something and you may need to replace them periodically or detach them for maintenance. If the signs are mounted on posts then bury the posts deep and you may need to bolt a cross arm on the bottom to stop people pulling them up or twisting the support around.

**Remember the support structure is part of the sign and must be integrated with it. Again it is essential to draw the structure with the board in place before you build it. Get other opinions.**



local materials  
unify a  
system sign



good balance  
and proportion  
(Lands and  
Survey)



## 5 Signs—location

Signs must be in harmony with the environment, with each other, and with other built structures. Materials, form, and scale should relate to associated structures.

A sequence of signs relating to a particular experience should have common features to help integrate that experience. For example, sign proportions may be similar throughout even though sizes may vary. Lettering may have a common colour, though upper and lower case letters of various sizes may be used.

Usually signs will be located on forest land. However, it may be necessary to get permission or legal conditions for a forest sign, especially adjacent to State Highways.

Signs are a last resort and should be kept to a minimum.

Imagine the guidance you would want, and compare this with the needs of your audience.

Get to know the audience—talk to forest visitors and ask them for comments.

Signs are part of a creative process. There are no absolutes. Signing is a process of testing relationships to find those most appropriate to the environment and the people who come to enjoy it.



sign and structure integrated



clutter and competition



## 5 Colour

Historically the use of colour on structures in the rural landscape did not require conscious decisions. As long as construction materials such as local wood, sod and stone were used they were naturally compatible with the landscape. Only this century has colour been so freely available and few things we construct now remain in their raw state. Since colour is such an important part of our daily experience, its use on structures needs careful consideration.

**Colour selection is generally regarded as a matter of individual taste based on subjective decisions. Nevertheless there are strong visual guidelines which can be followed. This section is not intended to deny individual choice but should help in colour selection by locating personal preference within a landscape context.**

The most important consideration in choosing colour for a structure is the landscape background. The colour of the structure will determine the degree of visual or colour attachment. Satisfactory attachment is achieved when the combination of colours selected has the greatest compatibility with the landscape background without losing definition of the structure's form. The degree to which a structure is compatible depends mainly on the extent to which it reflects light relative to its background. If it reflects more light than its background it appears light by comparison—if it reflects less, it appears dark by comparison. The extent to which a particular colour reflects light is determined by its 'weight'. Two other important factors are 'hue and greyness'. These three factors are basic to understanding the British Standard Colour System 5252 of 1976. This system makes it possible to refer all colours, regardless of brand name, to a common descriptive notation.





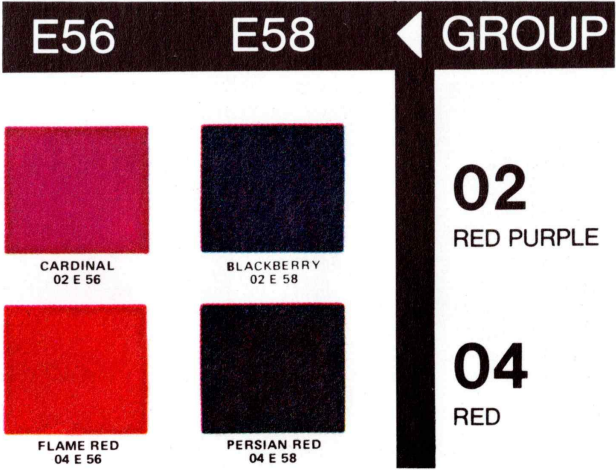
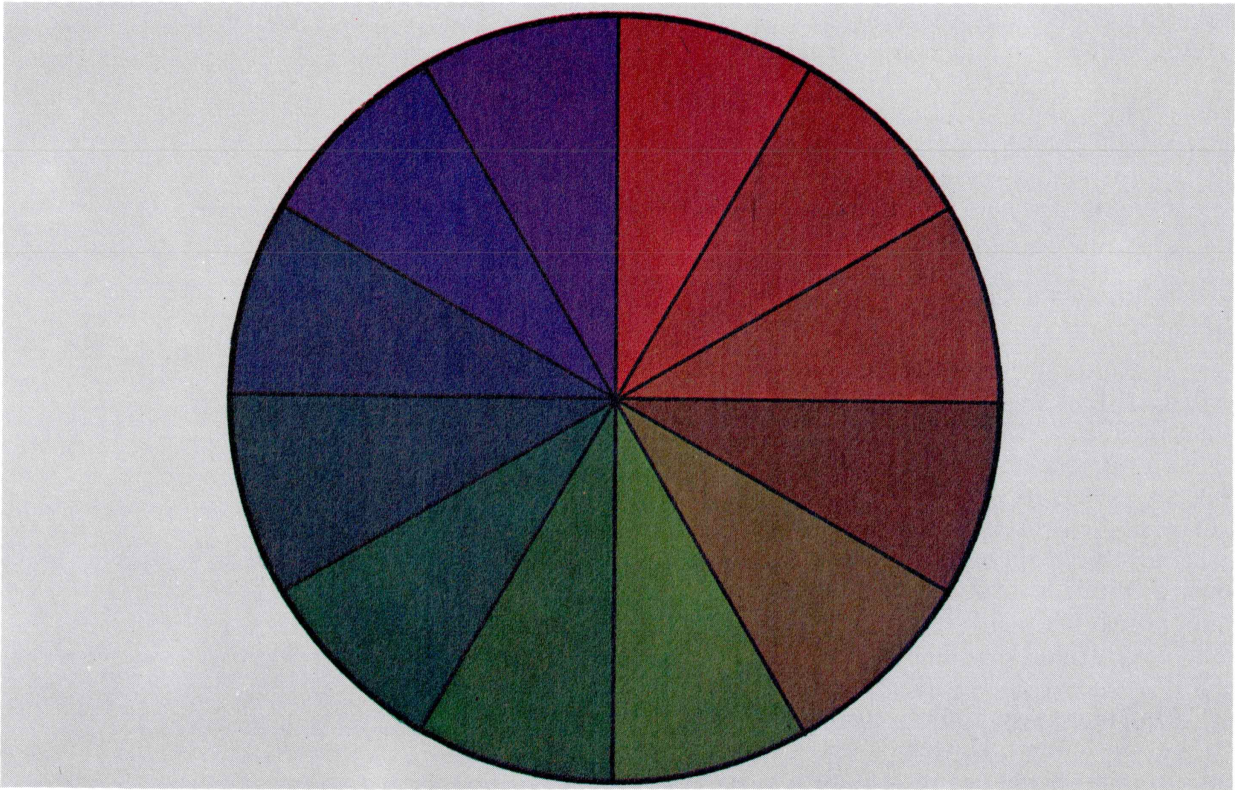
5 Colour—components

In order to understand the description which follows it is necessary to refer to a BS 5252 colour chart.

**Hue** corresponds to the way in which we normally describe colour e.g. blue, green, red. On the chart twelve different hues are arranged in horizontal rows from top to bottom in the same sequence as they appear in the normal spectrum, plus one further row of neutral colours (greys—no hue). The colours (hues) are designated by even numbers, 02-24. On the circle, hues further away from each other will tend to contrast more.

**Greyness** is the estimated grey content of colours. On the chart the horizontal rows of hues are divided vertically into 5 groups lettered A to E representing steps of diminishing greyness.

**Weight** is provided by 8 vertical columns in each of the greyness groups, graded from lightest on the left of each group to darkest on the right. The different colours in each vertical column within groups A, B, and C are adjusted to appear of similar weight or light reflectivity and vary significantly only in hue. The columns are numbered from the left hand column of A Group (01) to the right hand column of E group (58). Note: Similar reflectivity down each weight column does not hold for groups D and E.





## 5 Colour—components

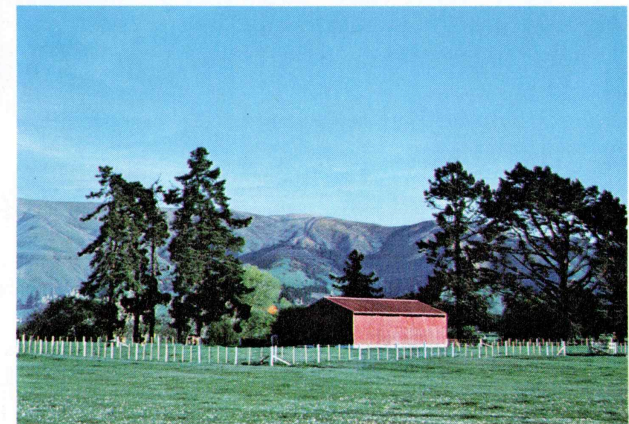
**Colour notation** identifies each colour according to its hue, greyness and weight.

In the landscape all three colour attributes will change according to light conditions and the season. No one attribute is stable enough to consistently describe the predominant background colour. If an attempt is made to paint the structure the same colour as the background, seasonal colour and light variation will inevitably result in a near miss and visual ambiguity. Of the three attributes “colour reflectivity”, which is a response to “weight”, has been identified as the most stable and is an important factor in visual perception. **Therefore, colour with the same weight as the background applied to a structure will result in visual attachment between the structure and its setting.** This leaves the complete spectrum of hues from which to choose a colour for a structure. It is critical that the main colour chosen has the same light reflectivity as its background (i.e. it should be in the same “weight” column as the dominant background colour). **Maximum year round attachment will occur when the colour chosen is immediately adjacent to the background colour isolated on the chart, and in the same ‘weight’ column. All colour choice must be made in the field and the light falling on the chart must be the same as the light falling on the background.** “Squinting” often helps by blurring colours to give an overall impression of weight.

As one moves away from the predominant background colour within the same weight column on the chart, visual attachment continues but hue contrast will increase.



forest head-quarters and village buildings are central to site function so some dominance is legitimate  
—aim for attachment of roof to surroundings and paint walls lighter



left, natural materials and colour  
right, attachment with hue contrast—light reflectivity similar to background



## 5 Colour—details

Although these guidelines are mainly concerned with the choice of colour within the overall visual scene, the attention paid to detail on structures often determines the final success or failure of a colour scheme.

Accent colours such as red, yellow, blue and white can be used with discretion on structures provided the area they cover is not excessive in relation to the overall structure.

Accent colours can:

- unify various structures on a site. For example, although buildings in a group are each visually attached to the background they may be of different hues. A common accent colour on window frames and doors will unify them.
- be used to highlight details such as gutters and fascia boards to clarify architectural form and create interest. They reduce the scale and monotony of a surface by breaking it up.



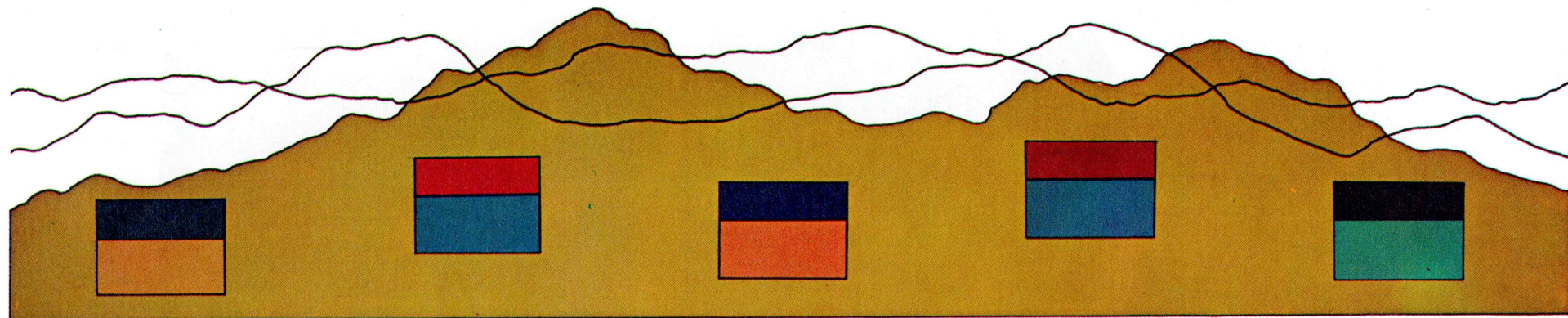
left, accent colour to emphasise details  
right, structure absorbed into background



buildings unified and attached to background



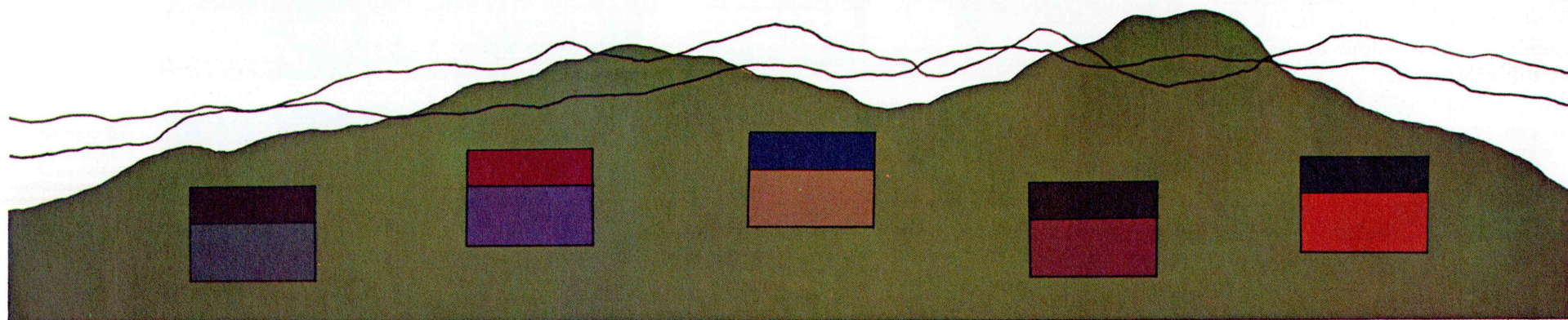
## 5 Colour—combinations



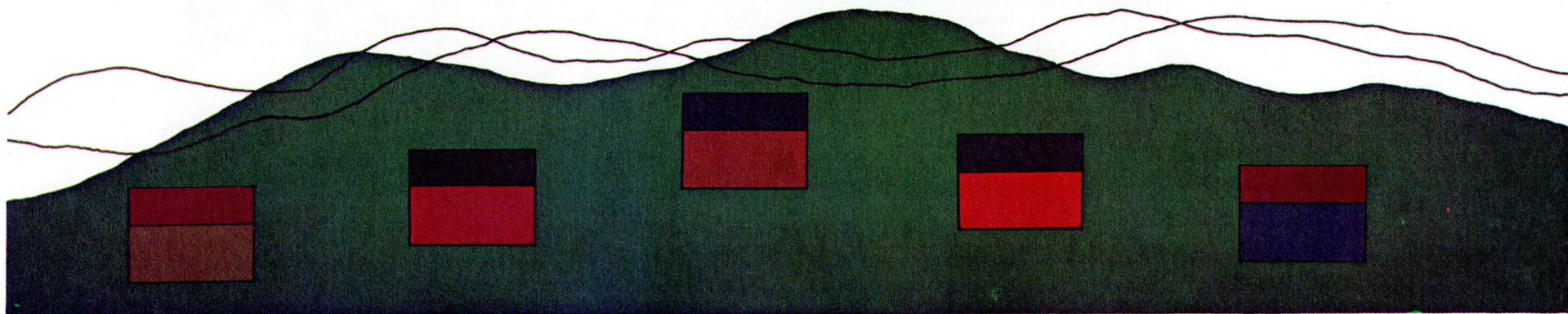
colour attachment of huts on  
—light  
—medium  
—dark  
backgrounds.

a hut is secondary to the experience of landscape—it should not compete for attention

however total absorption of hut into landscape is dangerous



if reflectivity of hut is similar to background a range of colours can be used





## 5 Colour—combinations

On a building there are normally variations in surface materials and the manner in which they are treated. It is traditional to distinguish between the roof and the walls. For this distinction to register their light reflectivity values must differ. Consequently close visual attachment of either the roof or the walls to the background will have to be foregone. It is generally most acceptable to visually attach the walls to the background and accept that the roof will be significantly darker.

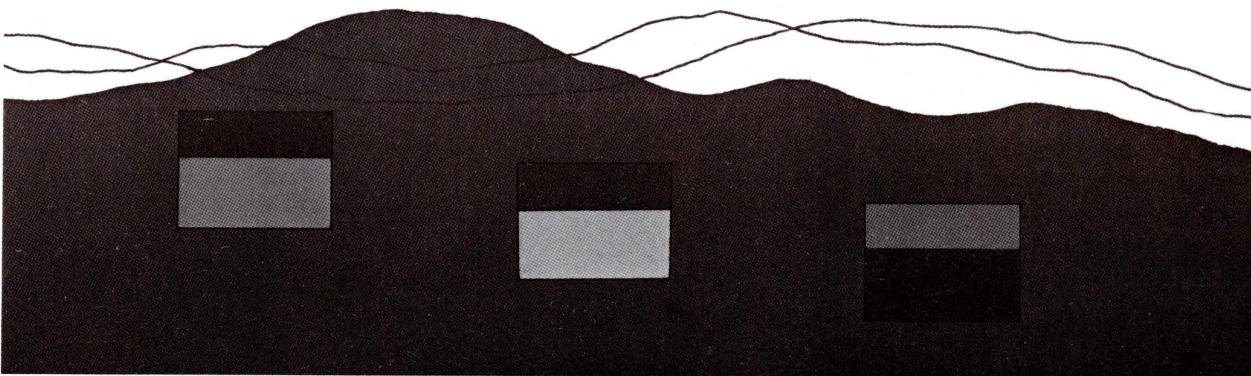
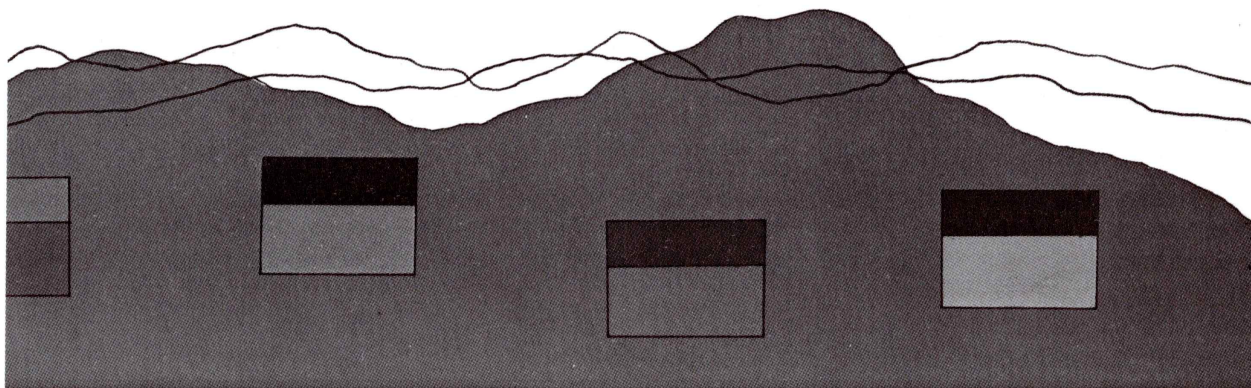
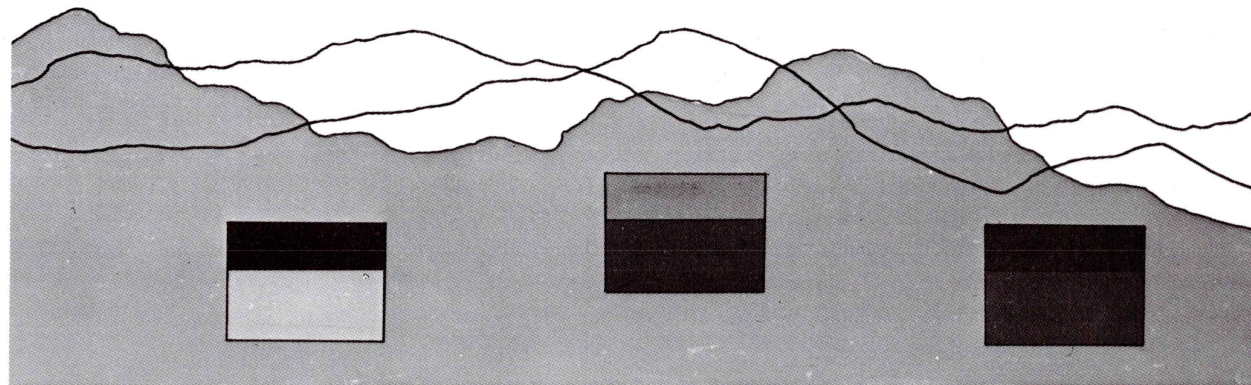
This serves to:

- relate the building to the ground rather than the sky
- clearly distinguish the roof from the walls so that the building's form is distinct
- compensate for a greater incidence of light falling on the roof.

To achieve these three objectives, the colour chosen for the roof must be significantly darker than the walls, bearing in mind that the roof normally fades faster.

People are quite intuitively adept with the use of colour, but it is experience which teaches. When uncertain, or in dealing with major projects, it is best to consult an architect or experienced building overseer.

A little thought and awareness of basic colour theory can mean the difference between a satisfactory colour scheme or a visual affront. If these notes help to narrow down the field of selection to colours derived from the background landscape, they have served their intended purpose.





The following provided photographs from their personal collections: Karen Nichols, Lou Sanson, Jude Ritchie, Craig Murdoch and Nick Hancox.















